Final
General Management Plan / Environmental Impact Statement
DEVILS TOWER NATIONAL MONUMENT

Crook County, Wyoming
November 2001

This *General Management Plan / Environmental Impact Statement* describes and analyzes five alternatives for managing Devils Tower National Monument. The approved plan will help managers make decisions about managing development, visitation, and natural and cultural resources for the next 15 to 20 years. Some issues to be addressed are vehicle congestion, crowded facilities, limited orientation and interpretation, and protecting the rural character of land outside monument boundaries.

Alternative 1, the no-action alternative, would continue the present management. It provides a baseline for understanding why certain changes may be advisable. There would be no new construction or major changes, and the monument would be operated and maintained as before. Summer congestion and noise in the Tower area would continue, and parking areas often would be full. Prairie dogs would be disturbed at pullouts along the main road. The four "action" alternatives prescribe various approaches to managing the monument's resources and visitation. In **alternative 2,** registration would be necessary for visits in the peak season. In all the action alternatives, adjustments would be made in parking and in the use of monument roads and trails. A landscaped pedestrian plaza would be created near the Tower in **alternatives 2, 3, and 4.** A shuttle system would be established in **alternatives 3 and 4,** with a staging area where visitors could park, receive orientation and interpretation, and hike or bicycle to the Tower. In **alternative 4** the staging area would be outside the monument boundary. Prairie dog viewing in **alternatives 3 and 5** would be available from large pullouts on both sides of the road. In **alternatives 2 and 4,** the current prairie dog pullouts would be removed and rehabilitated to natural conditions, but one loop of the Belle Fourche River campground would be converted to an area for parking and prairie dog viewing and interpretation. **Alternative 2** would emphasize offering a natural setting. Some areas would be restored to native vegetation, and camping would be available only in one loop of the campground. In **alternative 3, the preferred alternative,** some areas would be restored to natural conditions, and all camping in the monument would be eliminated. In **alternative 4** the headquarters and maintenance facilities would be relocated outside the boundaries, and their current locations would be restored to natural vegetation. Tour buses would park in the offsite shuttle staging area, which also would accommodate restrooms, visitor orientation and interpretation, and other visitor facilities. Camping would be available in one loop of the campground, with the other loop converted to accommodate a shuttle stop, tour bus parking, a prairie dog trail, picnic sites, restrooms, and interpretation. **Alternative 5** would offer experiences similar to those available now, but facilities would be added, and parking accommodations would be enlarged and redesigned. No shuttle system would be added, and the current camping facilities would remain. The headquarters building would be enlarged, and more restrooms would be added.

This document includes discussion of the potential environmental consequences of each alternative. In the no-action alternative, as in all the action alternatives, the overall adverse or beneficial effects on vegetation, prairie dogs, habitat for other wildlife, and wetlands would be negligible to minor with appropriate mitigation. Moderate adverse impacts on air quality and floodplains would continue in alternative 1, and there would be adverse impacts on the ethnographic resources sacred to American Indian tribes, with minor to moderate adverse effects on other cultural resources. The visitor experience would be adversely affected by crowding and a lack of services but would benefit from retaining the campground and prairie dog viewing. Alternatives 1, 2, 4, and 5 would compromise natural and beneficial floodplain values, a major adverse impact on floodplains, and a minor to moderate risk of severe flooding in these alternatives could cause major adverse impacts on campers. In alternative 3, removing the campground and rehabilitating the floodplain would restore natural and beneficial values, a major long-term beneficial effect, and removing the campground also would have a major beneficial effect on visitors who might have been at risk. Alternative 5 would cause long-term moderate adverse impacts on soils. Alternative 3 would result in moderate beneficial effects on historic resources. Alternative 5 would cause minor to moderate adverse impacts on historic resources, and mitigation might be required to comply with section 106 of the National Historic Preservation Act. The long-term beneficial effects on ethnographic resources from alternatives 2, 3, and 4 would be moderate, but alternative 5 would result in moderate long-term adverse impacts on ethnographic resources. Beneficial effects on the visitor experience from alternative 2 would be moderate to major; from alternative 3, major during peak use season; from alternative 4, minor to moderate. Alternative 5 would result in a long-term moderate adverse impact on the visitor experience. The short-term beneficial effect on employment opportunities and the local and regional economy, including indirect effects on local businesses and tax revenues from alternatives 2, 4, and 5 would be minor, and from alternative 3, moderate.

The public review period on the *Draft Environmental Impact Statement* ended September 30, 2001. This final document includes the results of the public comment on the draft document. The no-action period on this final plan and environmental impact statement will end 30 days after the Environmental Protection Agency has accepted the document and published a notice of availability in the *Federal Register.* For further information, write to Superintendent, Devils Tower National Monument, P.O. Box 10, Devils Tower, Wyoming 82714, or telephone 307/467-5283, or e-mail deto_planning@nps.gov.

SUMMARY

The purpose of this *General Management Plan / Environmental Impact Statement* is to define a direction for the management of Devils Tower National Monument for the next 15 to 20 years. The approved plan will provide a framework for making decisions about visitor use and the management of natural and cultural resources and development so that future opportunities and problems can be addressed effectively. The plan will prescribe the resource conditions and visitor experiences to be achieved over time according to law, policy, regulations, public expectations, and the monument's purpose, significance, and special mandates.

An updated plan is needed to address current issues related to increased visitation, the degradation of natural systems, changing regional land uses, and conflicts among various user groups. Some of those issues are vehicle congestion, crowded facilities, limited orientation and interpretation, and parking needs.

ISSUES TO BE ADDRESSED

The visitor center (built by the Civilian Conservation Corps in the 1930s) cannot accommodate the current level of visitation. Facilities used by the monument staff and the cooperating association are inadequate, as is storage space. However, despite the need for improved visitor and staff facilities, the small size of the monument and the importance of scenic views must be considered.

Natural resource issues that must be addressed are the management of floodplains, the effects of fire suppression on native vegetative communities, and visitor interaction with prairie dogs. The effects of changing economics and development patterns on the setting and character of the surrounding area also need to be considered. Aboveground powerlines can obstruct scenic views, and night lighting affects views from the Tower area and the monument's trails.

Visitors' use of the monument sometimes conflicts with the traditional cultural values of American Indians to whom Devils Tower has spiritual meaning. Visitors' understanding of the significance of Devils Tower National Monument is limited by a lack of adequate orientation and interpretation. Additional interpretive emphasis is needed to foster awareness among visitors of the significance of the Tower to the indigenous nations of the northern plains.

The National Park Service (NPS) at Devils Tower shares with many of its neighbors a concern for the long-term protection of the natural and rural character of the land outside monument boundaries. Actions taken by the Park Service or others could result in developments or land uses that would be inconsistent with local scenic values and would affect local residents' quality of life. To help preserve scenic values, the National Park Service would seek expanded legislative authority to accept donations of lands and/or interests in lands (such as scenic easements), as well as land exchanges (with no net gain of government land).

The National Park Service has worked with various landowners on agreements whereby the landowners would give the National Park Service scenic easements. Unfortunately, these efforts have not come to fruition. The National Park Service is willing to reexamine scenic easements if landowners are willing.

ALTERNATIVES

To achieve the desired conditions in Devils Tower National Monument, the planning team developed a "no-action" alternative (continuing present management) and four "action" alternatives for managing the resources and visitor uses of Devils Tower National Monument. Each action alternative would assign various areas of the monument to different management zones. The management zones identify how different areas could be managed to achieve a variety of

resource conditions and visitor experiences. In each alternative, the seven management zones — developed zone, pedestrian zone, natural trailed zone, developed camping zone, semiprimitive zone, special protection zone, and administrative zone — would each specify a particular combination of resource, social, and management conditions.

Alternative 1, the no-action alternative, represents the existing conditions at the monument. Under this alternative, the monument would continue to be managed as it has been in the past. This alternative is presented as a way of comparing current conditions to possible future conditions, as described in the other four alternatives. It provides a baseline for understanding why the National Park Service or the public may believe that certain future changes are necessary or advisable.

No new construction or major changes would take place under the no-action alternative, and the monument's existing facilities would continue to be operated and maintained as before. The Tower area would continue to be congested and noisy in summer, and the available parking areas frequently would be full, causing visitors to wait for parking spaces. The parking lots could not accommodate oversize vehicles, and trailers and larger recreational vehicles would have to be left in a dropoff area. Idling tour buses would continue to contribute to noise and congestion.

The initial section of the Tower trail still would be too steep for many visitors, especially those with impaired mobility. The prairie dog town pullouts along the main road would continue to contribute to traffic congestion and the disturbance of the animals and their habitat. The picnic area, the permit camping area for large groups, and the two-loop Belle Fourche River campground would be available for visitor use.

Alternative 2 would emphasize offering a natural setting. Peak season visitation would be reduced through a reservation system. Overall development would be reduced and natural vegetation restored in some areas. The Tower parking area would be converted to a landscaped pedestrian plaza designed with sensitivity to the historic context. The graveled parking area would be paved and redesigned to accommodate nearly all types of vehicles. Tour bus passengers would be dropped off and picked up near the Tower, with a special bus parking area near the campground. Trailer dropoff areas would be restored to native vegetation.

To maximize resource protection and opportunities for solitude in the northwest corner of the monument, tighter restrictions would be implemented, with parties of one to five self-registering and parties of six or more registering with a ranger. Visitor use of the north road would be prohibited beyond the Joyner Ridge trailhead, where the road would be retained for administrative and private access use only.

The beginning part of the Tower trail would be redesigned for easier access. Where two-track dirt roads make up part of a trail, one track would be restored to native vegetation, leaving the other track for a trail. The west road and the prairie dog viewing pullouts would be removed and revegetated to natural conditions. Trails around the prairie dog town would be graveled and widened, and loop B of the Belle Fourche River campground would be the only area open to camping. Prairie dog viewing and interpretation would be available in the present campground loop A.

In **alternative 3, the preferred alternative,** a shuttle system would be established, and visitors would be required to park at a staging area during peak use times; from there, they could hike, bicycle, or ride the shuttle to the Tower. Restrooms, a bookstore, expanded picnic sites, and access to the prairie dog town would be available at the staging area, and orientation and interpretation would be offered there. Tour buses would be required to return to the staging area to park after dropping off passengers at the Tower.

The paved parking area at the base of the Tower would be converted to a landscaped pedestrian plaza designed with sensitivity to the historic context. The focus of the current visitor center

would be on interpretation rather than on orientation. The gravel-surfaced parking area would be paved for parking and a shuttle stop. The beginning expanse of the Tower trail would be redesigned for easier access. Trailer dropoff areas would be restored to native vegetation.

The campground and other facilities in the Belle Fourche River floodplain would be eliminated and the area restored to natural conditions. The prairie dog town pullouts along the main road would be replaced with larger pullouts on both sides of the road. Where two-track dirt roads make up part of a trail, one track would be restored to native vegetation, leaving the other track for a trail. A spur trail would be built to link the Joyner Ridge and Red Beds trails.

To maximize resource protection and opportunities for solitude, tighter restrictions would be implemented, in the northwest corner of the monument, with parties of one to five self-registering and parties of six or more registering with a ranger. Visitor use of the north and west roads would be prohibited beyond the Joyner Ridge trailhead, where the road would be restricted to administrative and private use only. The headquarters building would be expanded to increase office and storage space.

In **alternative 4,** a shuttle system would be established (as in alternative 3), but the shuttle staging area and the visitor orientation facilities would be placed outside the monument boundary. Visitors would be required to park at the staging area at peak visitation times and go to the Tower by shuttle, hiking, or bicycling; at off-peak times, private vehicles could enter the monument.

The headquarters and maintenance facilities would be relocated outside the boundaries, and their current locations would be restored to natural vegetation. Tour buses would park in the staging area, which also would accommodate restrooms, visitor orientation, interpretation, a bookstore, an amphitheater, and picnic sites. The paved parking area near the Tower would be converted to a landscaped pedestrian plaza, as in alternative 3. The design and landscaping of this area would be sensitive to the historic context and would blend into the natural surroundings. The beginning expanse of the Tower trail would be redesigned for easier access.

The campground and the Belle Fourche River sites would be accessible by shuttle during peak use times and by private vehicle during non-peak times. Camping would be available in loop B of the Belle Fourche River campground, but no camping would be permitted in loop A, where a shuttle stop would be developed. Visitors could park there, and a trail would lead to the prairie dog town. Interpretation, restrooms, picnic sites, and an amphitheater would be available in this area. Tour buses would be required to park at this shuttle stop after dropping off passengers at the Tower.

Where two-track dirt roads make up part of a trail, one track would be restored to native vegetation, leaving the other track for a trail. A spur trail would be built to link the Joyner Ridge and Red Beds trails. Trailer dropoff areas and the prairie dog town pullouts would be removed and restored to native vegetation. The main road near the administration building would be redesigned to allow for safe and efficient traffic flow into and out of the shuttle stop.

To maximize resource protection and opportunities for solitude in the northwest corner of the monument, tighter restrictions would be implemented. Parties of one to five would self-register, and parties of six or more would register with a ranger. Visitor use of the north and west roads would be prohibited beyond the Joyner Ridge trailhead, where the road would be restricted to administrative and private use only.

Alternative 5 would offer experiences similar to those available now, but facilities would be added to reduce congestion. The paved and gravel-surfaced parking areas at the base of the Tower would be redesigned, enlarged, and consolidated for more efficient circulation, and all parking areas would be paved. To the extent possible within the available space, the approach to the Tower trail would be redesigned for easier access. No shuttle system would be added.

The Belle Fourche River campground would remain. Administrative headquarters would be enlarged to accommodate better visitor orientation and interpretive services. The visitor center parking lot and the overflow parking area would be enlarged, and all parking areas would be paved and redesigned to maximize safety and efficiency. The trailer dropoff area would be enlarged and paved to accommodate tour buses, which would be required to park there. The visitor center and ranger station would remain, but the exhibits would be minimal to reduce crowding. More restrooms would be added near the main parking lot.

To accommodate more vehicles, the prairie dog town pullouts would be converted to parking lanes on both sides of the road. The prairie dog town trail would be surfaced to reduce maintenance costs. The entrance station area would be redesigned to better accommodate seasonal traffic flow. The road to the Joyner Ridge trail would be widened and paved, and the trailhead parking area would be enlarged. Tighter restrictions would be implemented in the northwest corner of the monument, with parties of one to five self-registering and parties of six or more registering with a ranger.

ENVIRONMENTAL CONSEQUENCES

The planning team evaluated the potential consequences that the actions of each alternative would have on natural resources, threatened, endangered, or candidate species, cultural resources, the visitor experience, and socioeconomic resources. The beneficial or adverse effects were categorized as either short term or long term, and their intensity was rated as negligible, minor, moderate, or major. The impacts of the alternatives are compared in table 2.

For **alternative 1, the no-action alternative,** the overall adverse or beneficial effects on such natural resources as soils, vegetation, wildlife, wetlands, and threatened or endangered species would be negligible to minor with appropriate mitigative measures.

Air quality degradation — from vehicles waiting in line or circling to look for parking spaces and from tour buses idling — would continue. These adverse impacts would be moderate and long term at peak visitation times. Developments in the 100-year floodplain would continue to compromise the natural and beneficial values of floodplain areas. Developing an evacuation plan for the Belle Fourche River campground as mitigation would have a minor beneficial long-term effect on the floodplain.

Visitor congestion and vehicular traffic during peak visitation periods would continue to degrade ethnographic resources sacred to American Indian tribes in the peak use season, a major long-term adverse impact. Privacy for American Indian religious activities could be compromised by the presence of visitors and traffic. These conflicts would be a minor recurring short-term adverse impact on ethnographic resources. Traffic, erosion, and highway construction would reduce the number and integrity of the roadway features made in the 1930s by the Civilian Conservation Corps. The effects on other cultural resources would be minor, and the overall adverse effects on historic resources from alternative 1 would be minor to moderate.

The visitor experience would continue to be degraded by noise, vehicle smells, and the frustration of not being able to park at peak use times, a major adverse impact. Continuing the opportunity to observe prairie dogs would be a major beneficial effect for visitors. Retaining the administrative headquarters in the present location would continue a minor visual intrusion on the historic and natural scene in the long term, but continuing opportunities for a quiet, natural experience in the monument's northwest corner would result in a long-term major benefit for visitors.

Keeping the Tower trail as at present, with its difficult approach, would result in a major long-term adverse effect on visitors who could not experience the monument's primary resource. Traffic congestion on the main road, together with the requirement that towed vehicles be dropped off, would inconvenience visitors,

resulting in moderate adverse impacts at peak times. Some visitors would continue to be frustrated by the inability to receive orientation and interpretation; this would constitute a long-term moderate to major adverse impact on the visitor experience. Retaining the campground would constitute a moderate long-term beneficial effect for visitors.

The Devils Tower Trading Post and the KOA General Store would continue to have a competitive advantage over other commercial outlets, a moderate beneficial long-term effect for those businesses. Other socioeconomic impacts would be negligible to minor.

Alternative 2 would result in overall negligible to minor adverse impacts on soils, vegetation, prairie dogs, and other wildlife (with appropriate mitigation). There would be negligible to minor beneficial effects on air quality and wetlands, and a major long-term adverse impact on floodplains and on campers if they experienced flooding.

Traffic-related visual intrusions on culturally sensitive areas would be reduced, improving the ethnographic context of the area. This would be favorable to American Indian tribes. Decreased visitation and crowding would provide more opportunities for solitude and quiet for traditional uses, and visual and auditory intrusions would be reduced. On balance, the long-term beneficial effects on ethnographic resources from alternative 2 would be moderate. The adverse and beneficial effects on historic resources and the historic setting would be minor.

Long-term major beneficial effects on the visitor experience would result from reduced waiting lines, improved traffic flow, and reduced traffic. Adding a pedestrian plaza and moving parking farther from the Tower would make the setting quieter and more contemplative, but placing parking farther from the facilities could affect visitors with impaired mobility. However, since design could minimize the grade, this long-term impact would be minor. Redesigning the Tower trail access would benefit a significant number of visitors, a moderate to major beneficial effect on the visitor experience.

Short-term noise and visual intrusions from construction would cause moderate to major short-term adverse effects. Eliminating parking in pullouts along the main road would result in improved safety and a minor beneficial effect on the viewshed, and most visitors' experience would be enhanced by being able to see prairie dogs in a quiet setting without traffic congestion. Establishing a reservation system would limit visitors' ability to visit the monument spontaneously, a long-term major adverse impact because many visitors would be affected, and many place a high value on spontaneity. Having interpretation and information more effective and more readily available would be a major beneficial effect for most visitors.

The Devils Tower Trading Post and the KOA General Store would continue to have a competitive advantage over other commercial outlets, a moderate beneficial long-term effect for those businesses. If campers displaced from Devils Tower chose to camp at the KOA or Tower View campgrounds, that could result in a minor beneficial long-term effect on revenues at those campgrounds.

Construction work would result in about 16 new one-year jobs, and the expenditures of construction laborers would benefit local retailers, a minor short-term beneficial effect on the local and regional economy. Sales taxes collected on the expenditures of these workers would benefit local jurisdictions, as would the purchase of construction materials, a minor short-term beneficial effect on county sales tax revenues.

Alternative 3, the preferred alternative, would cause minor long-term adverse impacts on soils, vegetation, and prairie dogs (with appropriate mitigation) and a minor beneficial effect on wildlife habitat in the long term. There would be a long-term negligible impact on wetlands and a major long-term beneficial effect on floodplain values. This alternative also could result in a major long-term beneficial effect on campers,

who would not experience flooding if a flood occurred in the area of the current campground.

Establishing a shuttle system would improve the air quality at the base of the Tower and degrade it at the shuttle staging area at peak times. Closing the campground would improve the air quality because wood smoke from campfires would be eliminated. Enlarging the headquarters building and moving the parking lot to the back of the building would result in a minor long-term adverse effect on wetlands. Removing the campground would end overnight use of the 100-year floodplain, a major long-term beneficial effect on the floodplain.

A long-term moderate beneficial effect on ethnographic resources would result from converting the upper parking area to a pedestrian plaza, removing the prairie dog town pullouts, rehabilitating trails and disturbed areas, and limiting automobile access, all of which would improve the viewshed and reduce traffic noise. The ethnographic context would be improved by these actions, and more opportunities for solitude and quiet would be available for traditional uses. This would be favorable to American Indian tribes that might want to conduct religious activities at the Tower.

The construction activities of alternative 3 would cause some minor adverse impacts, as would adding a spur trail. Historic resources would benefit from removing the parking area at the base of the Tower, establishing a pedestrian plaza, operating a shuttle during peak visitation periods, and scheduling tour bus visits to the Tower.

Managing monument use in the northwest corner to protect its quiet, contemplative character would benefit the visitor experience in the long term. Construction noise and visual intrusions would cause moderate to major short-term adverse impacts on the visitor experience, and removing a campground would be a negligible to minor long-term adverse impact. The shuttle system would result in a long-term major adverse impact on visitors who place high value on spontaneity, privacy, and independence. This impact would be mitigated somewhat because the shuttle would operate only during the peak use season, and even at peak times there would be hours in the morning and evening when visitors would not be required to use the shuttle.

Crowding and noise in the Tower area would be reduced through managed visitation levels and the use of a shuttle system at peak times. Visitors would be free of the frustrations of searching for parking places, and many would enjoy the opportunity to experience the scenery without the pressures of driving. Adding restrooms also would benefit visitors. Redesigning the approach to the Tower trail would result in long-term moderate to major beneficial effects on the visitor experience. Adding a pedestrian plaza and moving parking farther from the Tower would make the setting quieter and more contemplative; however, having parking farther away could adversely affect visitors with impaired mobility. The design could minimize the grade; therefore, this long term impact would be minor.

Visitors' freedom of movement would be restricted by reducing road access in the northwest corner of the monument and by the requirement for use permits. The adverse effect of this would be minor for a small number of visitors, but it would be moderate for visitors with impaired mobility because of the loss of vehicle access to some parts of the monument. Safety would be improved by reducing traffic at the Tower area and providing pullouts on both sides of the road at the prairie dog town. Overall, alternative 3 would have a major long-term beneficial effect on the visitor experience during the peak season.

Moving the entrance station would allow more visitors to stop at businesses adjacent to the monument at peak times. This intermittent minor beneficial effect would be long term. Private campgrounds would gain new business, a moderate and intermittent beneficial effect on local businesses in the long term, and also a minor beneficial long-term effect on local taxing authorities.

The short-term construction projects of alternative 3 would result in about 61 one-year construction jobs, and the expenditures of construction workers would benefit local retailers, a minor short-term beneficial effect. The purchase of construction materials in the region would result in a minor short-term beneficial effect for regional suppliers and the regional economy. Sales taxes collected on the expenditures of construction workers would result in a minor short-term benefit for local jurisdictions, as would the taxes collected on construction materials.

Alternative 4 would have minor adverse effects on soils, vegetation, prairie dogs, and wildlife habitat (with appropriate mitigation). The air quality would be improved by adding a shuttle system and by the absence of wood smoke from campground loop A and the special permit camping area, but the air quality at the shuttle staging area outside the monument would be degraded. Removing the headquarters and maintenance facilities and the trailer dropoff and restoring the wetlands would have a moderate beneficial effect on wetlands in the long term.

Adding a shuttle stop in the floodplain would decrease the absorption of water by the soil and would conflict with the NPS policy of protecting natural and beneficial floodplain values, resulting in a long-term major adverse impact on floodplains. Removing the maintenance complex from the 500-year floodplain would increase natural values in that area, a long-term minor beneficial effect on floodplains. Since one section of the campground would continue to occupy part of the 100-year floodplain, if a 100-year flood occurred on the Belle Fourche River, there would be a hazard to campground occupants; however, the expected 3-hour flood warning time and the evacuation plan to be developed would allow ample time for campers to get out of the floodplain. Severe flooding has been infrequent, and the risks are minor to moderate, but flooding could result in major adverse effects on the visitors involved.

The viewshed would be improved and traffic noise and crowding would be reduced. This would improve the ethnographic context, offer more opportunities for solitude and quiet for traditional uses, and be favorable to American Indian tribes that might want to conduct religious activities at the Tower. This would be a long-term moderate beneficial effect on ethnographic resources.

Reducing the concentrations of people in the northwest corner of the monument through permitting would protect culturally sensitive areas and increase the opportunity for solitude in a larger area, a negligible long-term beneficial effect on traditional cultural practices. Not allowing visitors on the north and west roads would reduce visual and auditory intrusions in this culturally sensitive area and increase the sense of solitude. This beneficial effect on ethnographic resources would be minor and long term.

Visual and auditory intrusions from construction would result in short-term adverse impacts on historic resources, but beneficial effects would result from removing the parking area at the base of the Tower, establishing a pedestrian plaza, operating a shuttle at peak use times, and scheduling tour bus visits to the Tower.

Alternative 4 would have major long-term beneficial effects on the visitor experience, especially in the peak season, because the shuttle system would reduce noise and crowding, visitors would not have to search for parking spaces, and added restrooms would decrease visitor discomfort. The setting would be quieter and more contemplative when the paved parking area was replaced by a more natural pedestrian plaza, with vehicles parked farther away. However, moving parking farther from the Tower could adversely affect some visitors, especially those with impaired mobility. The design could minimize the grade; therefore, this long term impact would be minor. Opportunities for interpretation and orientation would be improved by increased space in the pedestrian plaza and more in-depth orientation at the shuttle staging area.

Redesigning the approach would improve access to the Tower trail, a long-term moderate to major beneficial effect. Views would be enhanced

by the reduction of pavement near the Tower. Relocating the administrative headquarters and maintenance facilities would improve the viewshed. Rehabilitating the area from which those facilities were removed to a natural appearance would improve the scenery, a long-term major beneficial effect on most visitors. Safety would be improved by reducing traffic at the Tower area, removing the prairie dog town pullouts, and realigning the intersection between the main road and the access road to the shuttle staging area.

The noise and visual intrusions from construction activities would have short-term moderate to major adverse effects on the visitor experience because they would occur in the monument's prime resource areas. Construction activities would impair the viewshed and displace some animals and birds, reducing visitors' opportunities for viewing wildlife. Visitors' opportunities to see the prairie dogs would be enhanced through improved access and improved prairie dog town trails. People could watch the prairie dogs in a quieter setting free from traffic congestion and safety concerns. The overall effect on the visitor experience would be long term and beneficial.

Eliminating 40% of the monument's campsites would result in a minor short-term adverse impact on some campers. Managing monument use in the northwest corner to protect the quiet, contemplative character of the visitor experience would benefit the visitor experience in the long term. Visitors' freedom of movement would be restricted by reduced road access in this area and by the requirement for use permits. Only a small number of visitors would be affected, so this long-term impact would be minor; however, for visitors with impaired mobility, the impact would be moderate because of the loss of vehicle access to some parts of the monument.

Visitors could not move around at their own pace during peak times, and using the shuttle might increase the cost of visiting the monument. Overall, the shuttle system would result in a long-term major adverse impact on visitors who place high value on spontaneity, privacy, and independence. This impact would be mitigated somewhat because the shuttle would operate only during the peak use season, and even at peak times there would be morning and evening hours when shuttle use would not be required. The shuttle system would reduce waiting lines at the entrance station, resulting in a long-term minor to moderate beneficial effect on the visitor experience.

Alternative 4 would result in a minor beneficial long-term effect on local taxing authorities from increased taxable revenues, and a minor long-term beneficial effect on the local and regional economy. Operating a shuttle service would have a minor beneficial long-term effect on employment opportunities, on the local and regional economy, and on local businesses and tax revenues. Between 8 and 29 jobs could be created. Overall, the shuttle service would contribute only a small percentage of the regional economy's jobs and earnings.

The addition of about 61 one-year construction jobs would be a minor short-term beneficial effect on the region's overall employment. The purchase of construction materials in the region would result in a minor short-term beneficial effect for regional suppliers and the regional economy. Sales taxes collected on the expenditures of construction workers would result in a minor short-term benefit on local jurisdictions, as would the taxes collected on construction materials.

In **Alternative 5** about 1 acre of natural soil profile would be lost, and despite efforts to prevent erosion, some soil probably would be eroded on about 5 acres disturbed by construction. About 2 more acres of soil would be covered with hardened surface, and none would be rehabilitated. Implementing alternative 5 would result in long-term moderate adverse impacts on soils.

The adverse impacts on vegetation, prairie dogs, wetlands, wildlife habitat, and air quality would be negligible to minor. There would be major long-term adverse impacts on floodplain values and on campers if they experienced flooding.

The solitude needed for religious ceremonies would be lessened by developments and increased visitor access. This alternative, which calls for the highest level of development and for paving the current trailer dropoff area and parking tour buses there, would compromise the ethnographic resources of the Tower area and degrade the viewshed. This would be a moderate long-term adverse impact on ethnographic resources. Adverse impacts on other ethnographic resources would be negligible to minor.

The effects on historic resources from visitor activity and traffic congestion would be minor. Adding parking lanes on both sides at the prairie dog town, redesigning the entrance station area, and increasing the size of the headquarters would modify the historic road corridor, a moderate long-term adverse impact. Redesigning the entrance station area would change the setting of the national register-listed entrance station, and widening the road through the prairie dog town could alter CCC elements of the historic road, such as culverts. The impacts that these actions would have cannot be known without more information on the details of design. One or both of these actions could require mitigation to comply with section 106 of the National Historic Preservation Act.

Improving the approach to the Tower trail would have a major beneficial effect on visitors who otherwise might be unable to have a close experience of the Tower. Added parking in the Tower area would reduce visitor frustration over the inability to find a parking space, and better design would foster safer traffic flow. However, alternative 5 would have long-term moderate to major adverse impacts on the visitor experience at peak use times because noise, traffic, and vehicle odors would continue to degrade the experience of the monument's prime resources.

Interpretive opportunities would be limited by the small size of the visitor center and by crowding at the Tower area. This would constitute a long term moderate to major adverse impact on visitors. For visitors to whom spontaneity is important, the freedom to come and go at their own pace would be perceived as a long term major beneficial effect. Continuing the availability of the campground and picnic area would have a long term moderate beneficial effect on visitors.

The Devils Tower Trading Post and the KOA General Store would continue to have a competitive advantage over other commercial outlets, a moderate beneficial long-term effect for those businesses. Adding parking along both sides of the road through the prairie dog town would improve traffic safety, a minor long-term beneficial effect. The creation of about 37 one-year construction jobs would have a minor long-term beneficial effect on employment opportunities and the local and regional economy, including indirect effects on local businesses and tax revenues.

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PURPOSE OF AND NEED FOR THE PLAN

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PURPOSE, NEED, AND SCOPING

BRIEF DESCRIPTION

Devils Tower National Monument comprises 1,347 acres in northeastern Wyoming on the northwest edge of the Black Hills. The monument's flora and fauna are typical of the Black Hills region of South Dakota and surrounding areas in Wyoming (NPS 1992). The Belle Fourche River, which flows through the eastern side of the monument, is part of the Cheyenne River Basin. Devils Tower, one of the most conspicuous geologic features of the Black Hills region, is made of igneous rock.

PURPOSE OF THE PLAN

The purpose of this *General Management Plan / Environmental Impact Statement* is to clearly define a direction for resource preservation and visitor experience at Devils Tower National Monument.

The approved plan will provide a framework for proactive decision-making, including decisions on visitor use and on managing natural and cultural resources and development. This will allow managers to address future opportunities and problems effectively.

This plan will prescribe the resource conditions and visitor experiences that are to be achieved and maintained in the national monument over time. What must be achieved according to law and policy will be clarified on the basis of review of the monument's purpose, significance, special mandates, and the body of laws and policies directing management. Management decisions that must be made where law, policy, or regulations do not provide clear guidance or limits will be based on the monument's purposes, the range of public expectations and concerns, resource analysis, evaluation of the natural, cultural, and social impacts of alternative courses of action, and consideration of long-term economic costs. This document will not propose specific actions or describe how particular programs or projects will be implemented or prioritized. Those decisions will be deferred to more detailed implementation planning, which will follow the broad, comprehensive decision-making presented in this document.

NEED FOR THE PLAN

The previous *General Management Plan* for Devils Tower was approved in 1986. The plan focused primarily on the construction of facilities, none of which have been built because of funding limitations. That plan did not address current issues related to greatly increased visitation, the degradation of natural systems, changing regional land uses, and conflicts among various user groups.

The major issues to be addressed in the plan are outlined in the following paragraphs.

Congestion

The national monument is subject to visitor congestion, including vehicular circulation and parking, crowded visitor facilities, and visitor carrying capacity.

Since the earliest years of Devils Tower National Monument, private automobiles have been the preferred means of access. For decades the National Park Service tried to satisfy increasing demands in traffic volume and vehicle size. Vehicular traffic during the peak visitor season now exceeds the monument's capacity. A dramatic increase in overall visitation has resulted in overcrowding, congestion, impacts on natural sound, and trampling of vegetation. Since 1985 visitation increased from 224,994 visitors per year to about 450,000 in 1990.

Visitation is concentrated into the prime resource areas of the Tower, the visitor center area, the Tower trail, and the prairie dog town. During times of heavy use, visitors must wait in long lines to use the facilities at the Tower area. Staff members frequently have to wait for more than 15 minutes to enter the monument grounds

when visitation is high. Not enough restrooms are available; this lack is among the most frequent complaints received from visitors.

Inadequate Staff Facilities

Offices for the monument staff are in four buildings located throughout the monument. Only two of these buildings were designed for office space; the other two are historic log cabins that have been modified for office space. None of the buildings has adequate space for today's staff and office requirements. In addition, storage space is inadequate, and there are no facilities for staff meetings or breaks. The space available for the cooperating association's offices and bookstore also is inadequate.

Interpretation and Visitor Orientation

Congestion and inadequate facilities limit the staff's ability to offer orientation and interpretation that would ensure visitor understanding of the monument's significance and allow visitors to make the best use of their time. The existing interpretive efforts concentrate on exploration by early settlers, recreational rock climbing, geologic theory of the Tower's origin, and wildlife. However, with growing awareness of the significance of the Tower to the indigenous nations of the northern plains, additional interpretive emphasis is needed.

A visitor center built by the Civilian Conservation Corps (CCC) in the 1930s to accommodate 20,000 visitors per year now must accommodate approximately 400,000 visitors a year. A 1995 visitor study showed that 80% of visitors who came to the monument used the visitor center, yet visitors ranked its quality among the poorest of the services and facilities.

Natural Resource Management

Flood control structures on the Belle Fourche River inside and outside the monument have severely damaged the riparian woodland system. The problem affects all the low elevation flatlands that make up the monument's southeast corner. Dying trees and a lack of natural regeneration are evidence of this impact. Floodplain values are further compromised by the presence of some development in the 100-year floodplain.

Virtually every square meter of the monument with soil has at least one of 56 exotic species. Herbicide applications to leafy spurge for the last 40 years have had a detrimental effect on riparian vegetation.

Fire suppression is affecting native vegetative communities and wildlife habitat throughout the national monument. Nearly a century of fire suppression has left the monument's pine forests more dense and vulnerable to catastrophic fires than in historic times. The lack of fire also has led to a failure to reproduce among deciduous woodland trees and shrubs.

Large numbers of visitors stop along the entry road to watch prairie dogs. Many people walk out into the prairie dog town, which impacts the vegetation and alters the animals' behavior. Visitors' feeding the prairie dogs alters the animals' behavior and poses a risk their health and safety. Occasionally the animals are lured to the road for handouts and are killed by automobiles.

Boundary and Cross-Boundary Concerns

Changing economics and development patterns threaten the traditional ranching lifestyle of monument neighbors and increase the potential for imminent development on adjacent lands. Such development could change the setting and rural character of the surrounding area.

A proposed new airport 8 miles from the monument (near Hulett) could negatively affect the monument's natural quiet and viewshed. Airport planners predict nearly 10,000 takeoffs and landings per year, concentrated during the summer months. Computer analysis of the viewshed indicates that night lighting at the airport could be visible from inside the national monument.

Cultural Resource Management

Modern recreational use, developments, and climbing on the Tower are sometimes in conflict with American Indian traditional cultural values. High levels of development, visitor use, and crowding at the base of the Tower are not consistent with the spiritual nature of the area.

Aesthetics

Aboveground powerlines obstruct scenic views in Devils Tower. Monument developments and night lighting affect views from key resource areas such as the Tower area and the trails.

Development

Despite the need for improved visitor and staff facilities, additional development is of concern because of the small size of the monument and the importance of scenic views.

THE SCOPING PROCESS

Notices, Newsletters, and Meetings

The notice of intent to prepare an environmental impact statement was published in the *Federal Register* on August 19, 1999. A newsletter was distributed in summer 1999 to inform the general public of the beginning of the planning process. The newsletter summarized the planning process and schedule, presented monument purpose and significance statements and mission goals, and included a brief listing of issues and concerns to be addressed in the plan. A response form included with the newsletter invited public comment on the purpose and significance statements and asked for any additional issues or concerns. Comments were received in the general areas of congestion, natural and cultural resource protection, interpretation and orientation, the monument boundary, aesthetics, and development.

A second newsletter released in fall 1999 summarized public response to the first newsletter, organized planning issues into three major decision points, and presented three possible concepts around which alternatives could be developed. Another mail-back comment form was included for public response.

A third newsletter issued in spring 2000 described possible management zones and introduced preliminary alternatives. Four open house meetings shortly after the release of the newsletter were attended by a total of 21 people.

A fourth newsletter issued in fall 2000 presented the proposed preferred alternative and asked for comments. Four subsequent open houses were attended by a total of 14 people.

American Indians were consulted throughout the planning process. Members of the planning team visited three tribal offices in October 1999 and October 2000, where 60 and 15 people attended, respectively. A consultation meeting took place in the spring of 2000 at Sundance, Wyoming, with 23 people in attendance.

Visitor Use Study

In summer 1999 the University of Minnesota Cooperative Park Studies Unit (CPSU) gathered information about visitors at Devils Tower National Monument (Univ. of Minn. 2000). Survey participants were representative of visitors who come throughout the summer season, not only during peak use times. The purpose of the study was to better understand experiences that monument visitors sought and attained. Information was gathered about visitors' background characteristics, activities that visitors engaged in, their attitudes concerning the quality and adequacy of available facilities, and their opinions about management strategies to address problems (such as alternative transportation to relieve congestion).Also see appendix A, "Development of the Preferred Alternative."

LAWS, POLICIES, AND MANDATES

Each unit in the national park system is guided by agencywide and park-specific laws, regulations, and policies. Understanding this guidance and how it affects each unit's mission is fundamental to planning for the future. This section highlights the missions (expressed as purpose, significance, and mission goals) and legal and policy mandates that guide the management of Devils Tower National Monument. These mission and mandate statements define the parameters within which all management actions must fall. All alternatives to be considered in the general management planning effort must be consistent with and contribute to fulfilling these missions and mandates.

MISSION AND GOALS

Monument Purpose

Devils Tower, the nation's first national monument, was established in 1906 under the Antiquities Act as "an extraordinary example of the effects of erosion in the higher mountains as to be a natural wonder and an object of historic and great scientific interest . . ."

Monument Significance

- Devils Tower, a monolith made of igneous rock, commands attention due to many symmetrical joint columns. At 867 feet high, it is the dominant landmark in the northern Great Plains.
- The Tower is sacred to many peoples. It figures prominently in the belief systems and narratives of northern Plains Indians.
- The Tower is one of the premiere areas for "crack climbing" (traditional climbing using natural cracks, crevices, and ledges) in North America and boasts a colorful 100-year climbing history.
- At Devils Tower, mountain and northern plains species meet in the ecological mix distinctive to the Black Hills.

Mission Goals

- Restore and maintain the health and diversity of the monument's natural systems.
- Preserve archeological, historic, and ethnographic values at Devils Tower.
- Interpret the significant and varied themes of Devils Tower.
- Balance educational, spiritual, and recreational uses of Devils Tower and its surrounding landscape to provide meaningful visitor experiences.

SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS

Climbing Management

The Final Climbing Management Plan / Finding of No Significant Impact was published in February 1995. This *General Management Plan* reaffirms the climbing plan. No alternative of this plan suggests any revisions. The *Climbing Management Plan* (NPS 1995) is summarized in appendix B.

Livestock Management

The monument contains no legal right-of-way for livestock. However, at this time it is an acceptable practice to allow a right-of-way and water gap for livestock on the south boundary of the monument. This is not a guaranteed use for the future.

SERVICEWIDE LAWS AND POLICIES

As with all units of the national park system, the management of Devils Tower National Monument is guided by the 1916 Organic Act (which created the National Park Service), the General Authorities Act of 1970, the act of March 27, 1978, relating to the management of the national park system, and other applicable federal laws and regulations, such as the Endangered Species Act and the National Historic Preservation Act. Actions are also guided by the National Park Service *Management Policies 2001* (NPS 2001a). Also see appendix C, "Legislation."

Many resource conditions and some aspects of visitor experience are prescribed by these legal mandates and NPS policies. Although attaining some of these conditions has been deferred in the monument because of funding or staffing limitations, the National Park Service (NPS) will continue to strive to implement these requirements with or without a new *General Management Plan*. This plan is not needed to decide, for instance, whether or not it is appropriate to protect endangered species, control exotic species, improve water quality, protect archeological sites, provide access for visitors with disabilities, or conserve artifacts.

The conditions prescribed by laws, regulations, and policies most pertinent to the planning and management of the monument are summarized in this chapter.

Natural Resource Management Requirements

Air Quality. The monument is a class II air quality area. Current laws and policies require that the following desired conditions be achieved in the monument:

- Air quality in the monument meets national ambient air quality standards (NAAQS) for specified pollutants. Healthful indoor air quality at NPS facilities will be ensured.
- Monument activities will not contribute to deterioration in the air quality.

(SOURCES: Clean Air Act, NPS *Management Policies)*

Although the National Park Service has very little direct control over air quality in the airshed encompassing the monument, monument managers cooperate with the Wyoming Department of Environmental Quality and the U.S. Environmental Protection Agency to monitor air quality and ensure that air quality is not impaired.

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to air quality:

- Participate in regional air pollution control plans and regulations and review of permit applications for major new air pollution sources
- Conduct operations in compliance with federal, state, and local air quality regulations

Water Resources, Floodplains, and Wetlands. Current laws and policies require that the desired conditions delineated below be achieved in the monument:

- Surface water and groundwater will be restored or enhanced.
- NPS and NPS-permitted programs and facilities will be maintained and operated to avoid pollution of surface water and groundwater.
- Natural floodplain values will be preserved or restored.
- The natural and beneficial values of wetlands will be preserved and enhanced.

- Long-term and short-term environmental effects associated with the occupancy and modification of floodplains will be avoided.

- When it is not practicable to locate or relocate development or inappropriate human activities to a site outside the floodplain or where the floodplain will not be affected, the National Park Service will do the following:

  - prepare and approve a statement of findings in accordance with DO 77-2

  - use nonstructural measures as much as practicable to reduce hazards to human life and property while minimizing impacts on the natural resources of floodplains

  - ensure that structures and facilities are designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR 60)

  - avoid direct or indirect support of new construction in wetlands unless there are no reasonable alternatives and the proposed action includes all practicable measures to minimize harm to wetlands

  - compensate for remaining unavoidable adverse impacts on wetlands by restoring wetlands that have been previously destroyed or degraded

- The National Park Service will implement a "no net loss of wetlands" policy and strive to achieve a longer-term goal of net gain of wetlands across the national park system through the restoration of previously degraded or destroyed wetlands.

  (SOURCES: Clean Water Act; Executive Order (EO) 11514, NPS *Management Policies,* EO 12088, EO 11988, Rivers and Harbors Act, Special Directive 93-4, EO 11990, Special Directive 77-1; Director's Order (DO) 77-2, "Floodplain Management"; DO 77-1, "Wetland Protection," National Flood Insurance Program (44 CFR 60.))

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to water resources, floodplains, and wetlands:

- Apply best management practices to all pollution-generating activities and facilities in the monument, such as NPS maintenance and storage facilities and parking areas; minimize the use of pesticides, fertilizers, and other chemicals and manage them in keeping with NPS policy and federal regulations.

- Remove from the floodplain the diesel, gasoline, and propane storage tanks that are marginally within the 500-year floodplain, or protect them as required by NPS policy.

- Remove any human made objects placed in the floodplain for erosion control that are no longer effective for the intended purpose.

Species of Special Concern. Current laws and policies require that the following desired conditions be achieved in the monument:

- Federally listed and state-listed threatened and endangered species and their habitats will be sustained.

- Native species populations that have been severely reduced in or extirpated from the monument will be restored where feasible and sustainable.

- The management of populations of exotic plant and animal species, up to and including eradication, will be undertaken wherever such species threaten monument resources or public health and when control is prudent and feasible.

  (SOURCES: Endangered Species Act; NPS *Management Policies,* EO 13112, "Invasive Species.")

Many species of invasive exotic plants have become established throughout much of the monument and threaten native species. Given time, these aggressive exotic plants can greatly

expand their populations, alter forest and wildlife habitats, and change scenery by smothering and displacing native species. These effects, which clearly are already occurring in some areas of the monument, will worsen substantially if left untreated. A sustained effort is needed to control these internal threats to the native species and their natural habitats.

The National Park Service will take the following kinds of actions to comply with legal and policy requirements related to native species and to manage the monument "in as natural condition as possible":

- Complete an inventory of plants and animals in the monument and regularly monitor the distribution and condition (e.g., health, disease) of selected species that are (a) indicators of ecosystem condition and diversity, (b) rare or protected species, (c) invasive exotics, (d) native species capable of creating resource problems (e.g., habitat decline due to overpopulation).

- Support research that will contribute knowledge for the management of native species.

- Take mitigating actions to restore native species and their habitats where warranted.

- Control or eliminate exotic plants where there is a reasonable expectation of success and sustainability.

Wildland Fire. Current laws and policies require that the following desired conditions be achieved in the monument:

- Monument fire management programs will be designed to meet resource management objectives prescribed for the various areas of the monument and to ensure that the safety of firefighters and the public are not compromised. Until a fire management plan is approved, all wildland fires will be aggressively suppressed, taking into account the resources to be protected and the safety of firefighters and the public.

  (SOURCES: NPS *Management Policies,* DO 41, "Wilderness Preservation and Management.")

All fires burning in natural or landscaped vegetation will be classified as either wildland fires or prescribed fires. All wildland fires will be effectively managed, considering resource values to be protected and firefighter and public safety, using the full range of strategic and tactical operations as described in an approved fire management plan. Prescribed fires are those fires ignited by managers to achieve resource objectives.

To provide information on whether specified objectives are met, monitoring programs will be instituted for such fires to record fire behavior, smoke behavior, fire decisions, and fire effects. The monument has an approved fire management plan and is in the process of drafting a new plan that follows an updated format.

Night Sky. The monument's night sky is a feature that contributes to visitors' experiences. The following is a desired condition for the night sky:

- The National Park Service will cooperate with monument neighbors and local government agencies to seek ways to minimize the intrusion of artificial light into the night scene in the monument. In natural areas, artificial outdoor lighting will be limited to basic safety requirements and will be shielded when possible.

  (SOURCES: NPS *Management Policies*)

The National Park Service will take the following kinds of actions to comply with the policy mentioned above:

- The monument staff will work with local communities and other agencies to encourage the protection of the night sky.

- The monument staff will evaluate the impacts on the night sky caused by monument

facilities. If light sources in the monument are determined to be affecting night skies, the staff will study alternatives such as shielding lights, changing lamp types, or eliminating unnecessary sources.

- The monument staff has signed a memorandum of agreement with the town of Hulett and the Hulett Airport Advisory Board to shield, to the extent possible, the beacon associated with the Hulett Municipal Airport from view of all parts of Devils Tower National Monument and to install radio frequency-controlled runway and taxi lights that can be turned on and off from an aircraft.

Natural Sounds. An important part of the NPS mission is to preserve or restore the natural soundscapes associated with national parks. The sounds of nature are among the intrinsic elements that combine to form the environment of our national parks. The following are desired conditions regarding natural sounds.

- The National Park Service will preserve the natural ambient soundscapes, restore degraded soundscapes to the natural ambient condition wherever possible, and protect natural soundscapes from degradation due to human-caused noise. Disruptions from recreational uses will be managed to provide a high quality visitor experience in an effort to preserve or restore the natural quiet and natural sounds.

- Noise sources will be managed to preserve or restore the natural soundscape.

(SOURCES: NPS *Management Policies,* Executive memorandum signed by President Clinton on April 22, 1996.)

The National Park Service will take the following kinds of actions to comply with the policies mentioned above.

- Actions will be taken to prevent or minimize unnatural sounds adversely affect monument resources or values or visitors' enjoyment of them.

- The National Park Service will work with the Federal Aviation Administration (FAA), tour operators, commercial businesses, and general aviation interests to encourage aircraft to fly outside the monument, especially for flights where the presence of the monument is incidental to the purpose of the flight (i.e., transit between two points). Actions that might be considered to encourage pilots to fly outside the monument include identifying the monument on route maps as a noise-sensitive area, educating pilots about the reasons for keeping a distance from the monument, and encouraging pilots to comply with FAA regulations and advisory guidance, in a manner that will minimize noise and other impacts.

- The monument staff will continue to require tour bus companies to comply with regulations designed to reduce noise levels (for example, turning off engines when buses are parked).

- Noise generated by NPS management activities will be minimized by strictly regulating administrative functions such as the use of motorized equipment. Noise will be a consideration in the procurement and use of equipment by the monument staff.

- The monument staff has signed a memorandum of agreement with the town of Hulett and the Hulett Airport Advisory Board to establish a voluntary no-fly advisory zone of 2 miles centered on Devils Tower National Monument. (Up to a 3-mile zone may be considered during June out of respect for American Indian values) This no-fly advisory zone does not include lands adjacent to the monument, aircraft operations associated with law enforcement, search and rescue and medical emergency activities, firefighting, agricultural practices, and utility rights-of-way surveys.

Cultural Resource Management Requirements

Archeological Resources. Current laws and policies require that the following desired conditions be achieved in the parks:

- Archeological sites will be identified and inventoried and their significance determined and documented. Archeological sites will be protected in an undisturbed condition unless it is determined through formal processes that disturbance or natural deterioration is unavoidable. When disturbance or deterioration is unavoidable, the site will be professionally documented and salvaged in consultation with the state historic preservation officer and American Indian tribes.

  (SOURCES: NPS *Management Policies,* National Historic Preservation Act; EO 11593; Archeological Resources Protection Act; the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation;* programmatic memorandum of agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995.)

The Archeology Laboratory of the University of South Dakota conducted an intensive survey of Devils Tower National Monument from July to September 1997 and July to August 1998. The purpose of *The Archeological 1997–1998 Survey and National Register Evaluation of Devils Tower National Monument, Crook County, Wyoming* (Univ. of SD Archeol. Lab. 1998) was to locate and interpret all historic and prehistoric sites in the monument and evaluate their significance within the guidelines of the National Register of Historic Places. Of the 25 sites found eligible for the national register, 8 are historic: homestead, administrative district, Tower ladder, entrance station, entrance road, cabin/motel site, historic road, and graffiti. Of these, the administrative district, the entrance station, and the entrance road have been listed on the National Register of Historic Places. Seventeen earlier sites were found eligible: Devils Tower, a cave, two prehistoric rock paintings, and 13 lithic scatter sites. Among the 17 sites were artifacts dating from the Late Paleoindian period to the Late Prehistoric. Indications of heavy occupation were found for the Late Plains Archaic and Late Prehistoric periods.

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to archeological sites:

- Treat all archeological resources as eligible for listing on the National Register of Historic Places pending a formal determination by the National Park Service and the Wyoming state historic preservation office as to their significance

- Protect all archeological resources eligible for listing or listed on the national register; if disturbance to such resources is unavoidable, conduct formal consultation with the Advisory Council on Historic Preservation, as appropriate, and the state historic preservation officer in accordance with the National Historic Preservation Act and implementing regulations.

Ethnographic Resources. Certain contemporary American Indian and other communities are permitted by law, regulation, or policy to pursue customary religious, subsistence, and other cultural uses of NPS resources with which they are traditionally associated. Consistent with the establishment clause of the Constitution, the National Park Service wishes to accommodate tribal religious activities. To the extent permitted by law, the National Park Service will take care to protect resources in a way that will accommodate their religious value. The following are the desired conditions for ethnographic resources.

- Appropriate cultural anthropological research will be conducted in cooperation with groups associated with the monument.

- All agencies, including the National Park Service, are required to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid

adversely affecting the physical integrity of these sacred sites.

- NPS general regulations on access to and use of natural and cultural resources in parks will be applied in an informed and balanced manner consistent with monument purposes, and the Park Service will not unreasonably interfere with any American Indian use of traditional areas or sacred resources that does not result in the degradation of resources.

- Other federal agencies, state and local governments, potentially affected American Indian and other communities, interested groups, the State Historic Preservation Officer, and the Advisory Council on Historic Preservation will be given opportunities to become informed about and comment on anticipated NPS actions at the earliest practicable time.

- All agencies are required to consult with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals. Parks (including Devils Tower National Monument) must regularly consult with traditionally associated American Indians regarding planning, management, and operational decisions that affect subsistence activities, sacred materials or places, or other ethnographic resources with which they are historically associated.

- The identities of community consultants and information about sacred and other culturally sensitive places and practices will be kept confidential when research agreements of other circumstances warrant.

- American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony and associated funerary objects will be consulted when such items may be disturbed or are encountered on monument lands.

(SOURCES: NPS *Management Policies,* National Historic Preservation Act, EO 11593, Advisory Council on Historic Preservation implementing regulations, EO 13007 on American Indian Sacred Sites, American Indian Religious Freedom Act, programmatic memorandum of agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995), Native American Graves Protection and Repatriation Act, Presidential memorandum of April 29, 1994, on government-to-government relations with tribal governments.)

To accomplish the above goals, the National Park Service will do the following:

- Continue to provide access to sacred sites and monument resources by American Indians when the use is consistent with monument purposes and the protection of resources.

- Survey and inventory ethnographic resources and document their significance.

- Treat all ethnographic resources as eligible for listing on the National Register of Historic Places pending a formal determination by the National Park Service and the Wyoming state historic preservation officer as to their significance.

- Protect all ethnographic resources determined eligible for listing or listed on the national register. If disturbing such resources is unavoidable, conduct formal consultation with the Advisory Council for Historic Preservation, as appropriate, with the state historic preservation officer, and with American Indian tribes. This consultation will be in accordance with the National Historic Preservation Act and the Advisory Council for Historic Preservation implementing regulations and programmatic agreement.

- Conduct regular consultations with affiliated tribes to continue to improve communica-

tions and resolve any problems or misunderstandings that occur.

- Continue to encourage the employment of American Indians on the monument staff to improve communications and working relationships and encourage cultural diversity in the workplace.

Historic Resources. Current laws and policies require that the following desired conditions be achieved for historic properties (e.g. buildings, structures, roads, trails, or cultural landscapes):

- Historic resources will be inventoried and their significance and integrity evaluated under national register criteria. The qualities that contribute to the listing or eligibility for listing of historic properties on the National Register of Historic Places will be protected in accordance with the *Secretary of the Interior's Standards* (unless it is determined through a formal process that disturbance or natural deterioration is unavoidable).

  (SOURCES: NPS *Management Policies,* National Historic Preservation Act, EO 11593, Archeological and Historic Preservation Act; the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for the Treatment of Cultural Landscapes;,* NPS-28: "Cultural Resource Management Guidelines" (1994) programmatic memorandum of agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (1995).)

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to historic properties:

- Determine the appropriate level of preservation for each historic property formally determined to be eligible for listing or listed on the national register (subject to the *Secretary of the Interior's Standards*).

- Implement and maintain the appropriate level of preservation for such properties.

- Analyze the design elements (e.g., materials, colors, shape, massing, scale, architectural details, and site details) of historic structures intersections, curbing, signs, picnic tables, and cultural landscapes in the monument (e.g., intersections, curbing, signs, and roads and trails) to guide the rehabilitation and maintenance of sites and structures.

- Before modifying any historic properties on the National Register of Historic Places, such as the main road, the log entrance station, or the Old Headquarters Historic District, the Park Service will consult with the Wyoming state historic preservation officer and the Advisory Council for Historic Preservation, as appropriate.

Collections. Current laws and policies require that the following desired conditions be achieved in the monument for museum collections:

- All museum objects and manuscripts will be identified and inventoried, and their significance determined and documented.

- The qualities that contribute to the significance of collections will be protected in accordance with established standards.

  (SOURCES: NPS *Management Policies,* National Historic Preservation Act, American Religious Freedom Act, Archeological and Historic Preservation Act, Archeological Resources Protection Act, Native American Graves Protection and Repatriation Act.)

To accomplish the above goals, the National Park Service will do the following:

- Inventory and catalog all monument museum collections in accordance with standards in the NPS *Museum Handbook.*

- Develop and implement a collection management program according to NPS standards to guide the protection, conservation, and use of museum objects.

Visitor Experience and Park Use Requirements

Current laws and policies require that the following desired conditions be achieved in the parks:

- Visitor and employee safety and health will be protected.

- Visitors will understand and appreciate park values and resources and have the information necessary to adapt to the monument's environments; visitors will have opportunities to enjoy the national monument in ways that leave the resources unimpaired for future generations.

- Recreational uses will be promoted and regulated, and basic visitor needs will be met in keeping with the monument's purposes.

- To the extent feasible, facilities, programs, and services in the national monument will be accessible to and usable by all people, including those with disabilities.

- Visitors who use federal facilities and services for outdoor recreation may be required to pay a greater share of the cost of providing those opportunities than the population as a whole.

- The national monument will identify implementation commitments for visitor carrying capacities for all areas of the unit.

(SOURCES: NPS *Management Policies,* National Historic Preservation Act, NPS Organic Act, DO 22, "Fee Collection," Title 36 of the Code of Federal Regulations (CFR), Americans with Disabilities Act, Architectural Barriers Act; Rehabilitation Act, 1998 Executive Summary to Congress; Recreational Fee Demonstration Program, *Progress Report to Congress,* vol. 1*: Overview and Summary* (U.S. Department of the Interior, National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management; U.S. Department of Agriculture, Forest Service), PL 95-625, 1978 National Parks and Recreation Act.)

The laws, regulations, and policies leave considerable room for judgment about the best mix of types and levels of visitor use activities, programs, and facilities. For this reason, most decisions related to visitor experience and use are addressed in the section "What Might Be Achieved," below, and in the alternatives. However, the authority to charge fees is dictated by law and is therefore the same for all alternatives.

The National Park Service will take the following kinds of actions to meet legal and policy requirements related to visitor experience and use of the national monument:

- Give visitors the opportunity to understand, appreciate, and enjoy the monument (management directions within this broad policy are discussed in the alternatives.)

- Continue to enforce the regulations governing visitor use and behavior in Title 36 of the Code of Federal Regulations (36 CFR).

- Ensure that all programs and facilities in the monument are accessible to the extent feasible.

- Following approval of the *Final General Management Plan*, the National Park Service will undertake detailed planning to establish visitor carrying capacity strategies and monitoring programs. If a shuttle system is to be established, the carrying capacity planning will be undertaken as part of the planning and design of the system. Studies will determine what levels of visitation will be consistent with the experiences that Tower visitors desire. Shuttle schedules and capacities will be used to manage the numbers of visitors dropped off at the base of the Tower.

- Regardless of whether or not a shuttle system is planned, the national monument will initiate a scheduling system for tour buses to manage the number of buses and tour groups at the Tower.

Sustainable Design/Development

Sustainability can be described as the result achieved by managing units of the national park system in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short-term and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy-efficient and ecologically responsible materials and techniques. The following are the desired conditions for sustainable design.

- NPS and concessioner visitor management facilities will be harmonious with monument resources, compatible with natural processes, aesthetically pleasing, functional, as accessible as possible to all segments of the population, energy-efficient, and cost-effective.

  (SOURCES: NPS *Management Policies,* EO 13123, "Greening the Government through Efficient Energy Management"; EO 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition"; NPS *Guiding Principles of Sustainable Design;* DO 13, "Environmental Leadership"; DO 90, "Value Analysis.")

The NPS *Guiding Principles of Sustainable Design* (1993b) directs NPS management philosophy. It provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook articulates principles to be used in the design and management of tourist facilities that emphasize environmental sensitivity in construction, the use of nontoxic materials, resource conservation, recycling, and integrating visitors with natural and cultural settings.

Sustainability principles have been developed and are followed for interpretation, natural resources, cultural resources, site design, building design, energy management, water supply, waste prevention, and facility maintenance and operations. The National Park Service also reduces energy costs, eliminates waste, and conserves energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems emphasizing the use of renewable energy sources.

In addition to following these principles, the following also will be accomplished:

- The staff of the national monument will work with appropriate experts to make the monument's facilities and programs sustainable. Value analysis and value engineering, including life cycle cost analysis, will be performed to examine the energy, environmental, and economic implications of proposed developments.

- The monument staff will support and encourage suppliers, permittees, and contractors to follow sustainable practices.

- Interpretive programs at the national monument will address sustainable practices within and outside of the national monument.

Rights-of-way and Telecommunication Infrastructure

Current laws and policies require that the following desired conditions be achieved in the national monument.

- Monument resources or public enjoyment of the monument will not be denigrated by nonconforming uses. Telecommunication structures will be permitted in the monument to the extent that they do not jeopardize the monument's mission and resources. No new nonconforming use or rights-of-way will be permitted through the monument without specific statutory authority and approval by the director of the National Park Service or his representative, and such use will be

permitted only if there is no practicable alternative to such use of NPS lands.

(SOURCES: Telecommunications Act; 16 USC 79; 23 USC 317; 36 CFR 14; NPS *Management Policies;* DO 53A, "Wireless Telecommunications"; Reference Manual 53, "Special Park Uses.")

The Telecommunications Act of 1996 directs all federal agencies to assist in the national goal of achieving a seamless telecommunications system throughout the United States by accommodating requests by telecommunication companies for the use of property, rights-of-way, and easements to the extent allowable under each agency's mission. The National Park Service is legally obligated to permit telecommunication infrastructure in the parks if such facilities can be structured to avoid interference with monument purposes.

The management of Devils Tower National Monument has determined that because of the monument's small size and the scenic and ethnographic significance of its resources, there are no appropriate locations for telecommunication infrastructure in Devils Tower National Monument.

Map: Location

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ALTERNATIVES, INCLUDING THE PROPOSED ACTION

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WHAT MIGHT BE ACHIEVED

DECISION POINTS

Decisions must be made in this *General Management Plan* about several major points, based on public comments and NPS concerns. Alternatives have been developed to explore these decision points. Issue categories are included; they are addressed by each decision point statement.

- Should the monument accommodate visitation as it comes, or should visitation be managed to reduce congestion?

  Related issue categories: (a) congestion, (b) managing natural and cultural resources, (c) interpretation and visitor orientation, (d) development

- Is land within the monument boundary adequate to protect the values, or should the National Park Service preserve the scenic and rural nature of the surrounding viewshed?

  Related issue categories: (a) boundary, (b) esthetics, (c) development

- In order to support and accommodate visitor experiences and resource conditions, what types and levels of development and management are needed?

  Related issue categories: (a) congestion, (b) interpretation and visitor orientation, (c) natural and cultural resource management, (d) development

ISSUE NOT ADDRESSED IN THIS PLAN

There is considerable controversy over the name of Devils Tower National Monument. Some local communities would like to have the current name retained, but affiliated American Indian tribes are offended by the association of the word "devil" with an area that is sacred to them. The tribes have signed a resolution that states a preferred name; they would like to have the name of Devils Tower changed to Bear Lodge.

The naming of a national monument or park is not within the purview of the National Park Service, nor is the naming of a geologic feature. Changing the name of the geologic feature would involve an administrative process through the United States Board of Geographic names, and changing the name of the national monument would involve an act of Congress. Neither of these processes is possible at present. The national monument has decided to continue educating the public about the name issue with the hope that over time the two sides can come together to resolve the controversy. Therefore, the resolution of the naming controversy is outside the scope of this *General Management Plan.*

RESOURCES AND VALUES AT STAKE IN THE PLANNING PROCESS

Specific impact topics were developed for discussion focus and to allow comparison of the environmental consequences of each alternative. These impact topics were identified on the basis of federal laws, regulations, and executive orders; the NPS *Management Policies 2001;* and NPS knowledge of limited or easily impacted resources. A brief rationale for the selection of each impact topic is given below.

Natural Resource Topics

The planning team selected seven natural resource impact topics. The selection was based on the major values or issues the team identified early in the planning process, as well as on applicable laws and executive orders (for example, the Endangered Species Act of 1973, as amended, Executive Order 11988, "Floodplain Management," and Executive Order 11990, "Protection of Wetlands"). Natural resource topics are soils, vegetation, wildlife, air quality, threatened, endangered, and candidate species (such as the black-tailed prairie dog), wetlands, and floodplains.

Cultural Resource Topics

Cultural resource impact topics were selected on the basis of major values identified in the monument's enabling legislation, values identified in the scoping process, and applicable laws and executive orders pertaining to cultural resources (the 1966 National Historic Preservation Act, the National Environmental Policy Act). The topics are ethnographic resources and historic resources.

Visitor Experience Topics

The planning team identified visitor experience as an important issue that could be appreciably affected under the alternatives. Impact topics in this category are visitors' experience of the monument resources, visitor access and freedom to experience the monument at one's own pace, visitors' access to orientation and interpretive information, and visitor safety.

Socioeconomic Resource Topics

Analyzing the local economic impacts provides the context for evaluating the possible impacts on the local area that could result from the alternatives. In addition, the national monument has neighbors that could be affected by the alternatives. The topics discussed are businesses, access to private property, and the local and regional economy.

TOPICS DISMISSED FROM FURTHER CONSIDERATION

Threatened, Endangered, and Proposed Species

The following species have been dismissed from consideration. However, the black-tailed prairie dog is analyzed as an impact topic.

Black Footed Ferrets. The black-footed ferret, an endangered species, has not been sighted at the national monument. Normally, a prairie dog town of about 5,000 acres or more is required to support a ferret. The size of the town at Devil's Tower is approximately 40 acres. *The Atlas of Birds, Mammals, Reptiles and Amphibians in Wyoming,* by the Wyoming Game and Fish Department, Wildlife Division (1997), states that there are "no recent data to suggest occurrence" of ferrets in the part of the state where Devils Tower is located. Therefore, actions of any of the alternatives of this plan would not affect any ferrets.

Bald Eagles. The bald eagle, a threatened species, does not nest at Devils Tower. It does occupy the monument all winter. Any construction activity to implement any alternative of the *General Management Plan* would be unlikely to occur in winter; therefore, the alternatives of this plan would not impact the bald eagle. However, a site has not been selected for out-of-monument staging in alternative 4. If that alternative was selected, the potential staging site would be surveyed for bald eagles.

Mountain Plover. According to the U.S. Fish and Wildlife Service, mountain plover, a species proposed for listing, is associated with short-grass prairie, plains, alkali flats, agricultural lands, cultivated lands, sod farms, prairie dog towns, and shrub-stepped landscapes at both breeding and wintering locales. There are areas in the monument that might be expected to support mountain plover, but none of the birds has been sighted at the monument. *The Atlas of Birds, Mammals, Reptiles and Amphibians in Wyoming,* by the Wyoming Game and Fish Department, Wildlife Division (1997), indicates that the mountain plover has been observed in the monument's area of the state, but there is no evidence of nesting. The Wyoming Natural Diversity Data Base lists no occurrences in Crook County.

According to a representative of the U.S. Fish and Wildlife Service, the only suitable habitat in the Devils Tower area may be the prairie dog town. However, mountain plovers tend to avoid people on foot. The prairie dog town contains a bisecting road and a footpath around the perimeter; therefore, the prairie dog town at Devils Tower is not likely to be used by mountain plover. The Fish and Wildlife Service has no

requirements for the conservation of proposed species such as the mountain plover.

Ute Ladies' Tresses. The Ute ladies' tresses, a threatened perennial, terrestrial orchid, has not been reported at Devils' Tower. However, the monument is in a drainage where the Fish and Wildlife Service recommends that surveys for the plant be conducted. The Wyoming Natural Diversity Database shows no reports of the plant in Crook County. The closest sighting is from Converse County, about 80 miles southwest of the monument. The plant was not found in either a floristic study of the national monument (Marriott 1982) or a vegetation mapping program (USGS 2000). There is an abundance of leafy spurge, an exotic plant, in areas where the orchid might be found. Given the level of reconnaissance that has been done and the condition of the habitat, the Park Service has concluded that there are no Ute ladies' tresses in the monument; therefore, these plants could not be affected by any action of this plan.

Prime and Unique Farmland

In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies must assess the effects of their actions on farmland soils classified as prime or unique by the Natural Resource Conservation Service, U.S. Department of Agriculture. Prime or unique farmland is defined as soil that produces general crops such as common foods, forage, fiber, and oil seed. Unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to the Natural Resource Conservation Service, there are no prime or unique farmlands in Devils Tower National Monument; therefore, the topic of prime and unique farmland has been dismissed as an impact topic in this document.

Water Resources

In all alternatives of this plan, the quality and quantity of water for personal consumption meets all standards and is abundant. In each alternative, the water source is from a deep aquifer that requires minimal treatment before consumption. In each alternative, there is adequate land base to develop needed sewage treatment facilities, or there is a facility currently in use that would handle the needed treatment. In the preferred alternative, the location for the staging area has been evaluated for utilities in a "Visitor Center Location and Feasibility Study" completed in January 1993. That study found the access to primary utilities (water, electricity, sewer, and telephone) adequate for the use level expected.

Archeological Resources

The Archeology Laboratory of the University of South Dakota conducted an intensive survey of Devils Tower National Monument from July to September 1997 and July to August 1998. The purpose of *The Archeological 1997–1998 Survey and National Register Evaluation of Devils Tower National Monument, Crook County, Wyoming* (Univ. of SD, Archeol. Lab. 1998) was to locate and interpret all historic and prehistoric sites in the monument and to evaluate their significance within the guidelines of the National Register of Historic Places. No known archeological sites lie within the area of potential effect in the monument for any alternative in this plan. However, a site has not been selected for out-of-monument staging in alternative 4. If that alternative was selected, the potential staging site would be surveyed for archeological resources and the other steps described in "Cultural Resource Management Requirements" would be followed.

Cultural Landscapes

Although several historic structures adjacent to the visitor parking lot are included as part of the Old Headquarters Area Historic District, modern changes to the area's landscaping have reduced landscape integrity, and according to the form nominating the district to the National Register of Historic Places, it no longer qualifies as a cultural landscape.

Collections

None of the alternatives in this plan would affect the monument's collections; therefore, the topic of collections will not be discussed.

Traffic

The current visitation to the monument impacts traffic only on the road linking Wyoming Highway 24 to the main monument road (Wyoming Highway 110). None of the alternatives described would appreciably alter traffic on WY 24, so there would be no impact on state roads. Therefore, the topic of traffic has been considered and dismissed.

Environmental Justice

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. No alternative would have health or environmental effects on minorities (including American Indian tribes) or low-income populations or communities as defined in the Environmental Protection Agency's *Environmental Justice Guidance* (1998). Environmental Justice has been dismissed as an impact topic in this document.

Relationships to Plans of Other Agencies

Possible conflicts between the alternatives and county, state, tribal, or federal land use plans and policies must be considered. Devils Tower is in the center of Crook County, Wyoming. Properties surrounding the monument are primarily privately owned residential and agricultural lands, and there are a few commercial and state-owned parcels. There are no tribal lands nearby. The county's most recent land use plan was completed in 1998. The purpose of the plan is "to establish a process for Crook County to coordinate with federal and state agencies on their proposed actions that may potentially affect the management of private and public land and natural resource use."

Crook County has been informed and involved in the development of this plan through informal and formal discussions with monument staff (more details are available in the "Public Involvement" chapter). The "Environmental Consequences" chapter contains analyses of the impacts of concern to the county. This ongoing consultation and the analysis of topics of concern are in accordance with the Crook County land use plan, which establishes a process for coordination with federal agencies on their proposed actions that might affect the management of private and public land and natural resources.

No actions of this plan would be inconsistent with the *Black Hills National Forest Land and Resource Management Plan* (USFS 1996) or the Wyoming *SCORP: State Comprehensive Outdoor Recreation Plan* (WY Dept. of Commerce 1995).

Any changes brought about by any of the alternatives would not conflict with any of the approved plans of other jurisdictions; therefore, this topic has been dismissed from further consideration.

Indian Trust Resources

President Clinton's April 29, 1994, "Memorandum for the Heads of Executive Departments and Agencies" directs that: "Each executive department and agency shall assess the impact of federal government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities."

In addition, order 3175 (Secretary of the Interior, November 8, 1993) states the following:

The heads of bureaus and offices are responsible for being aware of the impact of their plans, projects, programs or activities on Indian trust resources. Bureaus and offices when engaged in the planning of any proposed project or action will ensure that any anticipated effects on Indian trust resources are explicitly addressed in the planning, decision and operational documents. These documents should clearly state the rationale for the recommended decision and explain how the decision will be consistent with the Department's trust responsibilities.

One definition of tribal trust resources is "those natural resources, either on or off Indian lands, retained by, or reserved by or for Indian tribes through treaties, statutes, judicial decisions, and executive orders, which are protected by a fiduciary [trust] obligation on the part of the United States" (subsection B, section 3, Secretarial Order 3206, Babbitt 6/5/1997). None of the lands in Devils Tower are trust resources according to this definition. Therefore, this topic has not been analyzed.

POTENTIAL MANAGEMENT PRESCRIPTIONS
(MANAGEMENT ZONES)

An important tool in planning and management is the establishment of management prescriptions for various areas in the monument. Different management prescriptions are termed "management zones." Management zones identify how different areas could be managed to achieve a variety of resource conditions and visitor experiences. Each zone specifies a particular combination of resource, social, and management conditions. The National Park Service would take different actions in different zones with regard to the types and levels of uses and facilities. The following seven management zones have been described for Devils Tower. Alternatives for future conditions and management have been developed by placing these zones in different configurations.

DEVELOPED ZONE

Resource Condition or Character

In the developed zone, tolerance for resource degradation would be high where necessary for development. Maintaining scenic quality would be important. Natural sounds might be compromised because of the presence of vehicles and high levels of visitor use.

Visitor Experience

Visitors would use the paved roadways and associated developments in this zone for touring the monument, enjoying scenic overlooks, reading interpretive media, and gaining access to other zones. Visitor services in the developed zone would be convenient and easily accessible. Many areas would offer opportunities for social experiences, and the probability of encountering other visitors and NPS staff would be high.

Appropriate Kinds of Facilities

Facilities appropriate to the developed zone would be monument roads and parking areas, visitor facilities, staging area support facilities, entrance stations, scenic and interpretive pullouts, signs, interpretive media, and short trails. Also appropriate would be picnic tables benches, campgrounds, amphitheaters, restroom facilities, and other small structures. All structures and development would blend with the natural and cultural environment. Facilities and services would be fully accessible.

PEDESTRIAN ZONE

Resource Condition or Character

In the pedestrian zone, resources might be modified for essential visitor and monument operation needs, but they would be changed in ways that would harmonize with the natural environment, natural processes, and scenic quality of the adjacent zones. Because of these possible changes, the National Park Service's tolerance for resource degradation would be moderate.

Visitor Experience

High use areas and trail corridors in this zone would provide access to prime monument features. Visitors would be able to see, touch, smell, and hear the resources as they moved along well-defined trails and walkways. To use this area, visitors would need to make a short time commitment and physically exert themselves to some degree. The experience would be highly social and interpretive, with consideration for the natural appearance of the area. Visitor uses, sites, and trails might be intensively managed to ensure resource protection and public safety.

Appropriate Kinds of Facilities

Appropriate facilities in the pedestrian zone would be trails and walkways with pavement or other resilient surfaces, interpretive media, and

small visitor support structures such as restrooms, benches, or picnic tables. To the extent feasible, facilities and services would be accessible to people with disabilities.

NATURAL TRAILED ZONE

Resource Condition or Character

Resources in the natural trailed zone might be modified for essential visitor needs, but they would be changed in ways consistent with the natural environment, natural processes, and scenic quality of the adjacent zones. The tolerance for resource degradation would be low.

Visitor Experience

Trail corridors in this zone would be somewhat more primitive than those in the pedestrian zone. This area would give visitors a sense of being immersed in a natural landscape, and it would feel somewhat distant from most comforts and conveniences. Scenic quality and natural sounds would be essential. Visitors would have to commit a block of time and some physical exertion to use the area. The probability of encountering other visitors and NPS staff would be low. There might be some opportunities for interpretation, but any onsite media would be kept unobtrusive.

Appropriate Kinds of Facilities

Appropriate facilities in the natural trailed zone would be maintained but unsurfaced trails, trailhead parking, and access roads. Orientation signs and subtle interpretive media also would be appropriate. Other structures (such as fences, bridges, or boardwalks) would be appropriate only if required for resource protection.

DEVELOPED CAMPING ZONE

Resource Condition or Character

In the developed camping zone, some resource modification for visitor use would be appropriate, but the overall appearance would be natural or rural. The tolerance for the disruption of natural processes would be low.

Visitor Experience

Visitors would be permitted to stay overnight in a small established camping area with limited services. Camping would be possible in an uncongested natural setting, with options for social interaction or moderate privacy. Scenic quality and natural sounds would be important but might be somewhat compromised because of the presence of vehicles and visitor use.

Appropriate Kinds of Facilities

Access roads and parking areas would be appropriate for the developed camping zone, as would signs and interpretive media, campsites, restrooms, short trails, and benches and picnic tables. Other small structures might also be appropriate. The area would be highly managed for resource protection and visitor safety.

SEMIPRIMITIVE ZONE

Resource Condition or Character

The semiprimitive zone would be managed for resource protection, and no accommodations would be made for visitor use. Tolerance for resource degradation would be low, and the overall resource character would be pristine. The emphasis would be on restoring and perpetuating natural systems and processes.

Visitor Experience

Visitors would be permitted, but not encouraged, to enter the semiprimitive zone, which would not be equipped with any facilities. Any visitor who did venture into these areas might experience solitude, natural sounds, some sense of discovery and adventure, and pristine surroundings.

Appropriate Kinds of Facilities

It would be appropriate for the semiprimitive zone to have no visitor facilities, but. structures or devices used for research or resource management might be permitted.

SPECIAL PROTECTION ZONE

Resource Condition or Character

Areas with resource or ethnographic sensitivity or fragility requiring special management would be included in the special protection zone. Tolerance for degradation of resources would be low. Requests for visitor use or other access to this zone would be evaluated individually to ensure compatibility with resource management and protection.

Visitor Experience

Visitor uses and activities in the special protection zone would vary widely but would be limited to low impact activities compatible with the natural setting and ethnographic character. Registration or permits would be required. Uses would be managed intensively, and many restrictions might apply.

Appropriate Kinds of Facilities

The only facilities appropriate to the special protection zone would be those required for resource management or visitor safety, and they would be consistent with resource protection objectives.

ADMINISTRATIVE ZONE

Resource Condition or Character

The primary purpose of the administrative zone would be to contain administrative services and operational support. Natural character would be maintained to the highest degree possible consistent with this purpose. Resource degradation would be acceptable where necessary for development.

Visitor Experience

Under most circumstances there would be no visitor access to the administrative zone.

Appropriate Kinds of Facilities

Facilities needed for administration and operations would be included in this zone. These might include housing, buildings for maintenance and administration, utilities, access roads, and leachfields. All structures and development would blend with the natural and cultural environment. Facility design would emphasize operational efficiency, safety, and accessibility requirements.

ALTERNATIVE 1 (NO ACTION)

OVERALL CONCEPT

The no-action alternative represents the existing conditions at the monument. This alternative is presented as a way of comparing current conditions to possible future conditions, as described in the other four alternatives. Examining the no-action alternative is often useful in understanding why the National Park Service or the public may believe that certain future changes are necessary or advisable. The primary concerns about existing conditions are crowding and congestion during the heavy use season and the condition of some natural and ethnographic resources. The four "action" alternatives present different possible ways of addressing these concerns.

EXISTING CONDITIONS

Most visitor activity at the monument is centered on the developed and trailed areas at the base of the Tower, generally referred to as the Tower area. That area is congested and noisy during peak visitation times (June, July, and August, especially from 9 A.M. to 3 P.M.). A 75-space paved parking area and a 62-space graveled parking area are frequently full, and visitors often have to wait up to 15 minutes for a parking space. Neither parking lot can accommodate vehicles longer than the standard parking space will allow. The only way a longer vehicle can park is to parallel park over several parking spaces, and during peak visitation longer vehicles must park in a specially designated area (with limited space) alongside the very busy main road. Parking in this area puts visitor safety at risk. No walkways are associated with this specially designated parking area (see the Alternative 1 map).

Visitors pulling trailers are asked to disconnect their trailers and park them in a lot 2 miles from the Tower area. Recreational vehicles with passenger vehicles in tow are asked to disconnect and drive the smaller vehicles to the Tower area parking lot.

In summer some visitors come to the monument on tour buses. Bus operators drop passengers off in the Tower area and frequently remain in the area idling their buses. The overall noise, activity, and congestion in the Tower area has been described by some people as inconsistent with the beauty and grandeur of the Tower, interfering with the experience visitors are seeking.

A visitor center and a ranger station in the Tower area are listed on the National Register of Historic Places. Visitor orientation and interpretation are available in these historic buildings, as are a bookstore, employee office space, and restrooms. These structures were built to accommodate a small administrative staff and an expected visitation of 20,000 per year. The monument's current administrative staff is larger and has outgrown the facilities, and annual visitation is now about 400,000. These buildings are showing wear from excessive use and stopgap maintenance.

A surfaced trail (the Tower trail) with interpretive signs leads up to and around the base of the Tower. The initial section of the trail, which leads visitors to an unobstructed view of the Tower, is too steep for many visitors, especially anyone with impaired mobility or health conditions that limit their level of strenuous activity. In addition to the Tower trail, two longer loop trails are available for hiking. The Joyner Ridge trail leads off a gravel spur road off the main monument road, and the trailhead for the Red Beds trail is near the base of the Tower. Spur trails connect the Red Beds trail with the prairie dog town.

Approximately 5,000 people climb the Tower each year, using about 220 identified climbing routes. Most climbers abide by a voluntary climbing ban during June out of respect for American Indian spiritual activities. Climbing is managed according to a climbing management plan that was approved in 1995.

A prairie dog town along the main monument road is another location of primary visitor activity. Several traffic pullouts with interpretive signs enable visitors to stop and look at the prairie dogs. Some visitors use informal trails to walk around the general area. The pullouts cause traffic congestion and create hazardous conditions during high-use periods. Traffic and pedestrian congestion disturb the prairie dogs and their habitat and may affect visitors' enjoyment of the monument.

In the southeast part of the monument are a developed picnic area and the Belle Fourche River campground, a two-loop developed campground. Evening interpretive programs are offered at a nearby amphitheater.

The northwest corner of the monument is undeveloped, but it is accessible from two gravel- surfaced spur roads off the main monument road. These roads lead to neighboring private lands and offer scenic views. Some American Indian ceremonial activities also are accommodated in this area.

Just inside the monument from the entrance station, a small area between the road and the river is available by permit for group camping. There are no facilities, and campers must bring their own water and portable toilets. The area is used sporadically and infrequently.

The administrative headquarters, including staff offices, maintenance facilities, and housing, is near the picnic area and campground. Office space and storage for administrative and maintenance functions are too small to serve the current operation.

Alternative 1 map

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ALTERNATIVE 2

OVERALL CONCEPT

In alternative 2, offering a more rural, natural setting would be emphasized. This would be accomplished by reducing visitation to the Tower area during the peak season, reducing overall development, and restoring natural vegetation in some areas. Reservations would be necessary for visits during the peak season.

DETAILED DESCRIPTIONS

In all four action alternatives, the descriptions are organized by management zones. The various kinds of management zones are described at the beginning of this chapter. Also see the Alternative 2 map.

Developed Zone

The developed zone in alternative 2 would consist of campground loop A, the main monument roadway, and a parking area at the base of the Tower. To reduce congestion in the Tower area and to make it possible to see the Tower with fewer human-made intrusions, the existing paved parking area would be converted to a landscaped pedestrian plaza. The gravel-surfaced parking area would be paved and redesigned to accommodate nearly all types of vehicles and would become the only parking at the base of the Tower. Approximately 25% fewer visitors could be accommodated at the Tower than at present. An area would be incorporated in this design to allow for the dropoff and pickup of tour bus passengers. Tour buses would be required to park near the campground after dropping off passengers. Every effort would be made to keep the bus parking area as natural in appearance as possible, in keeping with the goals of this alternative.

Parking and trail access for prairie dog viewing and interpretation would be developed in loop A of the existing Belle Fourche River campground. No camping would be permitted in loop A, but people still could camp in loop B.

Visitors towing trailers or those with recreational vehicles towing passenger vehicles would be required to leave the trailers or large vehicles in the prairie dog town parking area before driving to the Tower. The current picnic area, amphitheater, and entrance areas would remain. To improve traffic safety and relieve congestion, The vehicle pullouts by the prairie dog town would be removed and rehabilitated to natural conditions.

Pedestrian Zone

The pedestrian zone would include the current paved parking area, the Tower trail, and the prairie dog town trail. As was mentioned above, the paved parking area in front of the visitor center would be converted to a pedestrian plaza. This area would be designed and landscaped to be sensitive to the historic context of the visitor center and ranger station and to blend into the natural surroundings of the Tower. Overall there would be fewer paved areas than at present. Vehicles would no longer be able to drive in front of the visitor center or the Tower trail trailhead. A view of the Tower would be available, and there would be less traffic noise and congestion. Facilities in this area could include interpretive exhibits, benches, an interpretive area, and walkways.

The beginning expanse of the Tower trail would be redesigned for easier access. Trails around the prairie dog town would be graveled and widened to encourage circulation on the trail only. Interpretation would be available along the trail.

Natural Trailed Zone

The natural trailed zone would consist of the Joyner Ridge, Red Beds, and South Side trail systems. Where abandoned two-track dirt roads form part of trail system, one of the tracks would

be restored to native vegetation, leaving the other track for the trail.

Developed Camping Zone

The developed camping zone would consist of loop B of the campground, the only place where camping would be permitted.

Semiprimitive Zone

The semiprimitive zone would comprise all parts of the monument not included in any other zone. As in all alternatives, this management zone would cover the largest areas of the monument. Group camping would not be available in the current special permit camping area near the entrance, and the area would be allowed to return to natural conditions. Trailer drop areas would no longer be needed; they would be restored to native vegetation.

Special Protection Zone.

The special protection zone would comprise the Tower and a large area in the northwest corner of the monument. To maximize resource protection and opportunities for solitude, tighter restrictions would be implemented. Parties of 1–5 would self-register, parties of 6 or more would be required to register with a ranger, and activities would be restricted to those that would result in minimal or no resource impact. Vehicles would be prohibited on the west road, which would be rehabilitated to natural conditions. Climbing would be managed according to the monument's *Climbing Management Plan.*

Administrative Zone

To reduce impacts on resources, the north road beyond the Joyner Ridge trailhead would be retained for administrative and private access use only. Visitor use on this route would no longer be permitted.

ESTIMATED COSTS

The costs of the construction and rehabilitation actions of alternative 2 have been estimated at $1.8 million. This estimate is general and should be used only for comparing the alternatives.

Alternative 2 map

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ALTERNATIVE 3 (PREFERRED ALTERNATIVE)

OVERALL CONCEPT

In alternative 3, shuttle service to the Tower would be instituted to decrease the number of vehicles and the need for parking and to make it possible for visitors to have a quieter, more relaxed experience. In peak visitation times visitors would be required to park at a staging area near the entrance, where orientation and interpretation would be offered. Here visitors could learn about all available options so that they could make best use of their time. From here, those who wanted to go to the Tower could use the shuttle or hike or bicycle to Tower. To alleviate congestion, the number of people at the Tower area would be adjusted by shuttle schedules or capacities. In non-peak times visitors could drive to the Tower (see the Alternative 3 map).

The existing paved parking area at the base of the Tower would be converted to a landscaped pedestrian plaza. The current gravel-surfaced parking area would be paved for parking and a shuttle stop. The campground and other facilities in the Belle Fourche River floodplain would be eliminated and the area restored to natural conditions. A shuttle system would be necessary to achieve the objectives of this alternative, and it would be an appropriate commercial use in the monument. A commercial shuttle operation would be economically feasible, and a concessioner could make a reasonable profit by industry standards (NPS 2001b).

DETAILED DESCRIPTIONS

Developed Zone

The developed zone in alternative 3 would consist of the area behind the entrance station and adjacent to the monument boundary, the main road, and a graveled parking area at the base of the Tower. A staging area for a shuttle system would be developed adjacent to the boundary, behind the entrance station. During peak visitation times, visitors would be required to park at the staging area and ride the shuttle, hike, or bicycle to reach the Tower. The staging area would accommodate visitor parking and tour bus parking. Restrooms, visitor orientation and interpretation, and a bookstore would be available here, as would interpretive program spaces, expanded picnic sites, and access to the prairie dog town and the monument trails.

A shuttle stop would be established, and tour buses could drop off and pick up passengers at the staging area. Tour buses would be required to park in the staging area after dropping off passengers. When the shuttle was not operating (in off-peak times) visitors would be directed into the staging area before continuing up the main road to the Tower. As a part of the staging area design, the current fee collection kiosk would be removed, and a new one would be placed at the staging area entrance to improve traffic circulation and reduce the queues of vehicles at the monument entrance.

At off-peak times, parking would be permitted in the current gravel-surfaced parking area, which would be paved and redesigned to accommodate most types of vehicles.

The vehicle pullouts along the main road at the prairie dog town would be replaced with larger pullouts on both sides of the road.

If funding for a shuttle system was not available or would be delayed for some time, traffic to the Tower would be managed from the staging area. For example, when parking at the Tower was full, visitors might be asked to wait at the staging area until parking became available. Visitors would always have the option of hiking or bicycling to the Tower.

To better accommodate incoming traffic and relieve congestion in front of the private businesses near the monument, the entrance station would be relocated closer to the shuttle staging area and the orientation center.

Pedestrian Zone

The pedestrian zone would consist of the area at the base of the Tower, the Tower trail, and the prairie dog town trail. The paved parking area in front of the visitor center would be redesigned to create a pedestrian plaza. This area would be designed and landscaped with sensitivity to the historic context of the visitor center and ranger station and to blend into the natural surroundings of the Tower. Overall there would be fewer paved areas than at present. Vehicles would no longer be able to drive in front of the visitor center or the Tower trail trailhead. A view of the Tower would be available, and there would be less traffic noise and congestion. The current visitor center would remain. Its focus would be on interpretation, rather than orientation. Facilities in this area could include interpretive exhibits, benches, an interpretive area, and walkways.

The beginning expanse of the Tower trail would be redesigned for easier access. Trails around the prairie dog town would be resurfaced to better accommodate visitor use and reduce maintenance costs.

Natural Trailed Zone

In the natural trailed zone would be the Joyner Ridge, Red Beds, and South Side trail systems. Where abandoned two-track dirt roads form part of trail system, one of the tracks would be restored to native vegetation, leaving the other track for the trail. When the shuttle was operating, access to the Joyner Ridge trailhead might not be available (specific shuttle stops have not been determined). For this reason, a new spur trail would be established to link the Joyner Ridge and Red Beds trails.

Semiprimitive Zone

The semiprimitive zone would comprise all parts of the monument not included in any other zone. The 50-space developed campground would be removed, and the picnic area and amphitheater would be relocated to a site in the staging area. Trailer dropoff areas would no longer be needed; they would be restored to native vegetation and enhanced floodplain values.

Special Protection Zone

The special protection zone would comprise the Tower and a large area in the northwest corner of the monument. To maximize resource protection and opportunities for solitude, tighter restrictions would be implemented. Parties of 1–5 would self-register; parties of 6 or more would be required to register with a ranger, and activities would be restricted to those that would result in minimal or no resource impact. Climbing would be managed according to the monument's *Climbing Management Plan.*

Administrative Zone

The administrative zone would consist of the north and west roads and the administrative/housing area in the southern part of the monument. To reduce impacts on resources, access to the north and west roads beyond the Joyner Ridge trailhead would be restricted to administrative and private use only. The headquarters building would be expanded to increase office and storage space.

Viewshed Protection Outside the Monument Boundary

The National Park Service at Devils Tower shares with many of its neighbors a concern for the long-term protection of the natural and rural character of the land outside monument boundaries. Actions taken by the Park Service or others could result in developments or land uses that would be inconsistent with local scenic values and would affect the quality of life for area residents and for the monument. To help preserve scenic values around the monument, the National Park Service would seek expanded legislative authority to accept donations of lands and/or interests in lands (such as scenic easements), as well as land exchanges (with no net gain of government land). This authority would

Alternative 3 map

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allow the Park Service to enter into land protection agreements with neighboring landowners who might choose to participate and who might benefit from such agreements.

The National Park Service has worked with various landowners on agreements whereby the landowners would give the National Park Service scenic easements. Unfortunately, these efforts have not come to fruition. The National Park Service is willing to reexamine scenic easements if landowners are willing.

ESTIMATED COSTS

The costs of the construction and rehabilitation actions of alternative 3 have been estimated at $4.7 million. This estimate is general and should be used only for comparing the alternatives.

ALTERNATIVE 4

OVERALL CONCEPT

Alternative 4 is similar to alternative 3, the preferred alternative, in that shuttle service to the Tower would be offered during peak visitation times. However, in alternative 4 the staging area for the shuttle and the visitor orientation facilities would be placed outside the monument boundary. Using lands outside the current boundary could involve federal acquisition or leasing of land or participation in a partnership with a private party or another government entity. Visitors would stop first at the staging area to learn about all available options, so that they could make best use of their time. Then, if they chose, they could take a shuttle to the Tower.

Headquarters and maintenance facilities would be relocated outside the boundaries, and their current locations would be restored to natural vegetation.

As in alternatives 2 and 3, the paved parking area near the Tower would be converted to a landscaped pedestrian plaza. However, in alternative 4 the campground and other monument facilities near the Belle Fourche River would remain. These areas would be accessible by shuttle during peak use times and by private vehicle during non-peak times. A shuttle system would be necessary to achieve the objectives of this alternative, and it would be an appropriate commercial use in the monument. A commercial shuttle operation would be economically feasible, and a concessioner could make a reasonable profit by industry standards (NPS 2001b).

DETAILED DESCRIPTIONS

Developed Zone

The developed zone in alternative 4 would consist of campground loop A, the main monument roadway, and a parking area at the base of the Tower. With the staging area for the shuttle system outside the current boundary, visitors would be required to park at the staging area at peak visitation times and ride the shuttle, hike, or bicycle to reach the Tower. At off-peak times, private vehicles could enter the monument. Headquarters and maintenance facilities would also be relocated to an area outside the boundary (see the Alternative 4 map).

The staging area would accommodate visitor parking and tour bus parking. Restrooms, visitor orientation, interpretation, and a bookstore would be available there, as would an amphitheater and picnic sites. When the shuttle was not operating (off-peak times) visitors would be directed into the staging area before entering the monument. At off-peak times, parking would be permitted in the current gravel-surfaced parking area, which would be paved and redesigned to accommodate most types of vehicles.

No camping would be permitted in loop A of the existing Belle Fourche River campground, but people still could camp in loop B. A shuttle stop would be developed in the area that is now campground loop A. At this stop, visitors could park, and there would be trail access so that they could see the prairie dog town. Also included at this stop would be related interpretation, restrooms, picnic sites, and the amphitheater. Tour buses would be required to park at this shuttle stop after dropping off passengers at the Tower. Campers would be permitted to drive to the campground at all times.

To enhance traffic safety and relieve congestion, the vehicle pullouts by the prairie dog town would be removed and rehabilitated to natural conditions. To allow for a safe and efficient traffic flow into and out of the prairie dog town shuttle stop, the main road near the administration building would be redesigned.

Alternative 4 map

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Pedestrian Zone

The pedestrian zone would consist of the parking area at the base of the Tower, the Tower trail, and the prairie dog town trail. The paved parking area in front of the visitor center would be redesigned to create a pedestrian plaza. The design and landscaping of this area would be sensitive to the historic context of the visitor center and ranger station and would blend into the natural surroundings of the Tower. Overall there would be fewer paved areas than at present. Vehicles would no longer be able to drive in front of the visitor center or the Tower trail trailhead. A view of the tower would be available, and there would be less traffic noise and congestion. The function of the visitor center would be shifted from a primary orientation center to an interpretive center. Facilities in this area could include interpretive exhibits, benches, an interpretive area, and walkways.

The beginning expanse of the Tower trail would be redesigned for easier access. The trails around the prairie dog town would be resurfaced to better accommodate visitor use and reduce maintenance costs.

Natural Trailed Zone

The Joyner Ridge, Red Beds, and South Side trail systems would make up the natural trailed zone in alternative 4. Where abandoned two-track dirt roads form part of trail system, one of the tracks would be restored to native vegetation, leaving the other track for a trail. When the shuttle was operating access to the Joyner Ridge trailhead might not be available (specific shuttle stops have not been determined). For this reason, a new spur trail would be established to link the Joyner Ridge and Red Beds trails.

Developed Camping Zone

The developed camping zone would consist of loop B of the campground, the only place where camping would be permitted.

Semiprimitive Zone

The semiprimitive zone would comprise all parts of the monument not included in any other zone. Group camping would not be available in the current special permit camping area near the entrance The picnic area and amphitheater would be relocated to a site in the staging area. The trailer dropoff areas would no longer be needed; they would be restored to native vegetation. A new headquarters and maintenance area would be constructed outside the monument boundary, and their present locations would be restored to natural conditions.

Special Protection Zone

The special protection zone would comprise the Tower and a large area in the northwest corner of the monument. To maximize resource protection and opportunities for solitude, tighter restrictions would be implemented. Parties of 1–5 would self-register; parties of 6 or more would be required to register with a ranger, and activities would be restricted to those that would result in minimal or no resource impact. Climbing would be managed according to the monument's *Climbing Management Plan.*

Administrative Zone

The administrative zone would consist of the north and west roads and the housing area in the southern part of the monument. To reduce impacts on resources, access to the north and west roads beyond the Joyner Ridge trailhead would be restricted to administrative and private use only.

ESTIMATED COSTS

The costs of the construction and rehabilitation actions of alternative 4 have been estimated at $6.7 million. This estimate is general and should be used only for comparing the alternatives.

ALTERNATIVE 5

OVERALL CONCEPT

In alternative 5, visitor experiences similar to those available now would be offered, but facilities would be added to reduce congestion. The paved and gravel-surfaced parking areas at the base of the Tower would be redesigned, enlarged, and consolidated for more efficient circulation, and all parking areas would be paved. There would be no shuttle system; visitors would hike or drive to all monument facilities and features. The existing level of visitation would be accommodated, but if visitation increased in the future, some management of visitor numbers could be required (see the Alternative 5 map).

The campground and other facilities near the Belle Fourche River would remain. The administrative headquarters would be enlarged to accommodate better visitor orientation and interpretive services.

DETAILED DESCRIPTIONS

Developed Zone

The developed zone in alternative 5 would consist of the main monument road, the prairie dog town pullouts, a tour bus parking area, a picnic area, and the amphitheater, as well as Joyner Ridge road, the west road, the north road, and the Tower area parking lot. To make as much parking as possible available at the base of the Tower, the size of the existing visitor center parking lot and the overflow parking area would be increased as much as reasonable. The entire parking area would be paved and redesigned to maximize safety and efficiency.

The current trailer dropoff area would be enlarged, redesigned, and paved to accommodate tour buses so that bus parking would not infringe on parking for personal vehicles at the Tower. After dropping off passengers at the Tower, tour bus operators would be required to drive back to the new bus parking area.

The visitor center and ranger station would continue to serve visitors and monument staff, but to reduce crowding, visitor center exhibits would be minimal. The historic buildings would be maintained to established standards. Additional restroom facilities would be developed near the main parking lot.

The road to the Joyner Ridge trailhead parking lot would be widened and paved for easier access. The existing vehicle pullouts at the prairie dog town would be converted to parking lanes on both sides of the road to accommodate more vehicles and reduce traffic congestion. The entrance station area would be redesigned to better accommodate seasonal traffic flow.

Pedestrian Zone

The pedestrian zone would consist of the Tower trail and the prairie dog town trail. The latter trail would be surfaced to better accommodate increased use and reduce maintenance costs. To the extent possible within the available space, the approach to the Tower trail would be redesigned for easier access.

Natural Trailed Zone

The natural trailed zone would consist of the Joyner Ridge, Red Beds, and South Side trail systems. The road to the Joyner Ridge trail would be widened and paved for easier visitor access. The trailhead parking area would be enlarged to accommodate approximately 10 vehicles. The trails would not be modified in any way.

Developed Camping Zone

Loops A and B of the Belle Fourche River campground would compose the developed camping zone. An area just inside the entrance would continue to be used for groups of more than 20 people to camp by permit.

Alternative 5 map

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Semiprimitive Zone

As in all the other alternatives, the semiprimitive zone would comprise most of the monument. There would be no changes from the existing conditions in this zone.

Special Protection Zone

The special protection zone would comprise the Tower, a relatively small area in the northwest corner of the monument, and the area behind the entrance station.

Tighter restrictions would be implemented: Parties of 1–5 would self-register; parties of 6 or more would be required to register with a ranger, and activities would be restricted to those that would result in minimal or no resource impact. Climbing would be managed according to the monument's *Climbing Management Plan*.

Administrative Zone

This zone would consist of the administrative/housing area in the southern part of the monument. The headquarters building would be enlarged to increase office and storage space and to accommodate visitor orientation and interpretation.

ESTIMATED COSTS

The costs of the construction and rehabilitation actions of alternative 5 have been estimated at $2.7 million. This estimate is general should be used only for comparing the alternatives.

ALTERNATIVES ELIMINATED, ENVIRONMENTALLY PREFERABLE ALTERNATIVE, AND MITIGATION

ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

During the planning process, the public suggested several ideas that were dropped from further consideration because they would have resulted in unacceptable impacts on resources or visitors. These ideas are discussed below.

Develop a Visitor Parking Area North of the Tower

Adding a visitor parking area north of the tower was considered; however, significant topographic modification would have been required. This would have resulted in unacceptable resource impacts, particularly since the construction would have taken place in a previously undisturbed area.

Develop Tent Campsites at the Special Permit Camping Area

The idea of developing tent camping sites at the current special permit camping area was considered, but it was rejected for several reasons. The existing campground is rarely fully occupied, so additional camping facilities are not needed. In addition, tent camping is readily available in nearby private and U.S. Forest Service camping areas.

Prohibit Vehicle Use in the Monument

Several members of the public suggested that vehicle traffic be halted at the entrance, allowing only trail access to the Tower. This idea was eliminated from further consideration because it would have resulted in severe impacts on visitors unable to hike to the Tower, who therefore would have been unable to experience the monument's primary resource. The alternatives, including the preferred alternative, would make substantial improvements to the natural setting of the Tower and would significantly reduce traffic noise, odors, and congestion, while still allowing most visitors to access the immediate Tower area. Access to the Tower by trail is currently available and would be improved in several of the alternatives.

Construct the Shuttle Staging Area at the Belle Fourche River Campground Site

A preliminary alternative prepared by the planning team called for constructing a shuttle staging area and associated facilities at the current Belle Fourche River campground. Visitor overnight use of the Belle Fourche River floodplain would have been eliminated, but the structures and other facilities in the floodplain would have remained. Subsequent public input suggested an alternative shuttle staging site just inside the entrance. This site was found to be outside the 100-year floodplain, and it has been included in the preferred alternative.

THE ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in section 101 of the National Environmental Policy Act. Ordinarily, this means the alternative that would cause the least damage to the biological and physical environment; it also means the alternative that would best protect, preserve, and enhance historic, cultural, and natural resources. Alternative 3, which has been selected as the preferred alternative, is also the environmentally preferable alternative. Three of the six criteria listed in NEPA are particularly relevant:

(a) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.

(b) Assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.

(c) Preserve important historic, cultural, and natural aspects of our national heritage, and, wherever possible, maintain an environment that supports diversity and variety of individual choice.

In the process used to select the preferred alternative, alternative 3 was found overall to have the best potential for safeguarding the resource and scenic values of Devils Tower National Monument while making those resources easily accessible to visitors. The spiritual character and cultural heritage values of the Tower would be protected under this alternative, and the visitor experience would be enhanced. Removing developments from the floodplain of the Belle Fourche River would represent the highest level of natural resource protection and restoration of any of the alternatives.

MITIGATION AND ADDITIONAL STUDIES

Water Resources

A statement of findings for floodplains would be prepared if the selected alternative included retaining the campground in the 100-year floodplain. The statement of findings would include an emergency preparedness plan for evacuating campers in the event of a flood. More detail is available in the "Affected Environment" chapter, under "Natural Resources."

Any new facilities proposed for location in the floodplain (except trails, roads, and picnic facilities) would be designed to manage flood conditions, and a statement of findings for floodplains would be prepared.

For critical actions in the 500-year floodplain (existing fuel storage at the maintenance area and storing propane tanks at headquarters), mitigating actions would be undertaken, such as moving the fuel storage to a location out of the 500-year floodplain or constructing a protective embankment. Constructing an embankment would require the approval of a statement of findings for floodplains.

All facilities would be located to avoid wetlands if feasible. If avoiding wetlands was not feasible, other actions would be taken to comply with Executive Order 11990 ("Protection of Wetlands"), the Clean Water Act, and Director's Order 77-1 ("Wetland Protection").

A statement of findings for wetlands has been prepared because the preferred alternative would result in long-term negligible adverse impacts on wetlands (see appendix E). The statement of findings includes an analysis of the alternatives, delineation of the wetland, a wetland restoration plan to identify mitigation, and a wetland functional analysis of the impact site and the restoration site.

Increased caution would be exercised to protect wetlands from damage caused by construction equipment, erosion, siltation, and other activities with the potential to affect wetlands. Construction materials would be kept in work areas, especially if the construction took place near streams or natural drainages.

Wetlands would be delineated by qualified National Park Service staff or certified wetland specialists, and they would be marked before construction.

Cultural Resources

Whenever possible, monument staff would continue to educate visitors about American Indian concerns regarding the displacement of offerings or the disturbance of religious activities.

In accordance with NPS policies and procedures, the protection of cultural resources would continue as much as would be allowable under present funding and staffing levels. The disturbance of significant resources would be avoided wherever possible. Where avoidance or preser-

vation could not be achieved, appropriate mitigation would be carried out according to the procedures of the Advisory Council on Historic Preservation (36 CFR 800).

"Stop work" provisions and other protective measures would be included in project documents implementing the preferred alternative. Construction would be restricted to the immediate vicinity of the projects, and new disturbance would not be permitted outside the designated project area.

If previously unknown and significant archeological resources were unearthed during construction or if human remains were discovered, work in the discovery area would be stopped immediately, and the monument superintendent and the contracting officer would be notified immediately. Measures would be instituted to protect the remains, sacred objects, associated funerary objects, and objects of cultural patrimony. The superintendent would notify the state historic preservation officer. Any artifacts found in association with the remains, funerary objects, sacred objects, and objects of cultural patrimony would be left in place. If the remains were determined to be of American Indian origin, the monument superintendent would notify associated tribes according to NAGPRA and its implementing regulations.

TABLE 1: COMPARISON OF ALTERNATIVES

Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Developed Zone			
Graveled parking area redesigned and paved for primary Tower parking	Graveled parking area redesigned and paved for off-peak Tower parking and shuttle stop	Same as alternative 3	Graveled and overflow parking areas combined and enlarged as much as possible to maximize parking available at Tower
Pullouts for prairie dog town removed and returned to natural conditions	Prairie dog town pullouts replaced with larger ones on both sides of road	Same as alternative 2	Parking lanes added at prairie dog town
No shuttle system	Shuttle staging area developed *inside* boundary; would include parking, restrooms, orientation, interpretation, amphitheater, and picnic sites	Shuttle staging area developed *outside* current boundary; would include parking, restrooms, orientation, interpretation, amphitheater, and picnic sites	No shuttle system
Loop A of Belle Fourche River campground converted to use for trailer drop, tour bus parking, prairie dog viewing, and interpretation	Trailer drop not needed; no camping in monument	Campground loop A converted to use for shuttle stop, prairie dog viewing. interpretation, restrooms, and off-peak trailer drop; intersection of main road realigned near campground	Trailer drop area paved for tour bus parking; Belle Fourche River campground unchanged from present use
Pedestrian Zone			
Paved Tower parking area converted to landscaped pedestrian plaza	Same as alternative 2	Same as alternative 2	Pedestrian zone in this alternative consists of only trails; parking enlarged (see developed zone, above)
Visitor orientation at Tower visitor center	Visitor orientation moved to shuttle staging area	Same as alternative 3	Same as alternative 2
Natural Trailed Zone			
Natural character of Joyner Ridge, Red Beds, and South Side trails improved	Same as alternative 2	Same as alternative 2	No changes in trails
No spur trail added	Spur trail established between Red Beds and Joyner Ridge	Same as alternative 3	No spur trail added; access road improved and trailhead parking area enlarged to accommodate about 10 vehicles
Developed Camping Zone			
Camping permitted in loop B of campground; (loop A converted to prairie dog viewing and interpretation); no large group camping	Camping in the monument eliminated	Camping permitted in loop B of Belle Fourche River campground; (loop A converted to shuttle staging area); no large group camping	Camping permitted in loops A and B of Belle Fourche River campground; large groups could camp by permit at area just inside entrance

Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Semiprimitive Zone			
Special permit camping area, trailer drop area, and prairie dog town pullouts returned to natural condition; native vegetation restored	Special permit camping area and campground/picnic area complex restored to native vegetation	Special permit camping area, prairie dog town pullouts, picnic area, amphitheater site, trailer dropoff area, and headquarters and maintenance sites restored to native vegetation	No sites vacated for restoration to natural conditions
Special Protection Zone			
Zone would cover Tower and large area in NW part of monument; west road rehabilitated to natural conditions; tighter restrictions and registration to protect resources	Zone would cover Tower and large area in NW part of monument; tighter restrictions and registration to protect resources	Zone would cover Tower and small area in NW part of monument; tighter restrictions and registration to protect resources	Zone would cover Tower and minimal area in NW part of monument; tighter restrictions and registration to protect resources; special permit camping would continue as at present
Administrative Zone			
No visitor use of north road beyond Joyner Ridge trailhead	No visitor use of west and north roads beyond Joyner Ridge trailhead	Same as alternative 3	No change in use of roads
No changes in headquarters	Headquarters building enlarged for more office and storage space	Headquarters and maintenance relocated outside boundary	Headquarters building enlarged for more office and storage space and to accom-modate orientation and interpretation

TABLE 2: COMPARISON OF IMPACTS

Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Soils				
Soil erosion a short-term minor adverse impact; compaction, reduced permeability, less moisture, and erosion from ongoing visitor use would be long-term, negligible, and adverse.	Some natural soil profile lost from regrading at lower parking area, a minor short-term adverse impact; construction would disturb about 4 acres of soil, increasing erosion, a minor short-term adverse impact; erosion, soil nutrient transport, and vegetation composition increased by adding 0.5 acre more of paved surfaces (including gravel), a long-term minor adverse impact; overall adverse impacts on soils minor and long term.	A small part of natural soil profile lost on less than 1 acre; some soil erosion on 15 acres from construction and rehabilitation despite preventive efforts; 4 more acres covered with hardened surfaces; 9 acres rehabilitated; overall adverse impacts on soils minor and long term.	Natural soil profile lost on up to 8 acres; some soil erosion on about 10 acres from construction and revegetation despite preventive efforts; 4 more acres covered with hardened surfaces; 2 acres rehabilitated; overall adverse impacts on soils minor and long term.	Natural soil profile lost on about 1 acre; some soil erosion on about 5 acres from construction and revegetation despite preventive efforts; 2 more acres covered with hardened surfaces; none rehabilitated; overall adverse impacts on soils moderate and long term.
Vegetation				
Maintenance and visitor use would change relative abundance of species, cause death of some plants from trampling and exposure of root systems; resulting changes in species composition adverse, negligible to minor, and long term.	Although there would be a net gain of 2.6 acres of vegetation and improved preservation of vegetation in the northwest area, 1.3 acres of already- disturbed vegetation lost, a minor long-term adverse impact.	About 6 acres of disturbed vegetation lost, 9 acres revegetated; clearing some vegetation during construction could increase relative abundance of invasive plants; more erosion at cleared areas could expose root systems, causing death of mesic plants; preservation of a prairie remnant in northwest corner of monument enhanced; overall adverse effects on vegetation minor and long term.	About 2 acres of disturbed vegetation lost inside monument and up to 5 acres outside; clearing some vegetation during construction could increase relative abundance of invasive plants; more erosion at cleared areas could expose root systems, causing death of mesic plants; overall adverse impacts on vegetation minor and long term.	About 3 acres of disturbed vegetation lost, none revegetated; clearing some vegetation during construction could increase relative abundance of invasive plants; more erosion at cleared areas could expose root systems, causing death of mesic plants; overall adverse impacts on vegetation minor and long term.
Wildlife				
Wildlife would suffer collisions with vehicles, habitat interruption, alteration of movement, resulting in minor adverse impacts in the long term.	Wildlife habitat increased by about 2.6 acres; smallness of area and care to avoid cottonwood trees in campground would result in a minor beneficial effect in the long term.	About 6 acres of habitat lost, 9 acres rehabilitated; invertebrates destroyed and small vertebrates displaced, small mammals and birds disrupted by construction; overall effects on wildlife minor, beneficial, and long term.	About 8 acres of habitat lost, 2 acres rehabilitated; invertebrates destroyed and small vertebrates displaced, small mammals and birds disrupted by construction; overall adverse effects on wildlife minor and long term.	About 3 acres of habitat lost; invertebrates destroyed and small vertebrates displaced, small mammals and birds disrupted by construction; overall adverse effects on wildlife minor and long term.

Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Air Quality				
Overall adverse impacts on air quality generally minor and long term.	Overall long-term effects on air quality in peak season minor and beneficial because of reservation system.	Air quality at base of Tower improved through shuttle system, degraded at staging area in peak times; wood smoke eliminated by removal of campgrounds, improving air quality; overall, minor adverse changes in air quality.	Air quality at base of Tower and shuttle staging area (former campground) improved through shuttle system, degraded at staging area outside monument in peak times; wood smoke reduced by removing campground loop A and special permit area; overall adverse impacts on air quality minor and short term at peak use times.	More effects on air quality than alternative 1 because more visitors and vehicles, especially at base of Tower; overall adverse impacts on air quality negligible and long term.
Threatened, Endangered, and Candidate Species				
Size of black-tailed prairie dog town limited by preventing its spread into other suitable habitat; a minor long-term adverse impact; benefits of retaining prairie dog colony partially offset by preventing expansion, an adverse regional effect.	About 0.1 acre of prairie dog habitat lost, a minor long-term adverse impact.	About 0.8 acre of prairie dog habitat lost, a minor long-term adverse impact.	Same as alternative 3.	About 1 acre of prairie dog habitat lost, a minor long-term adverse impact.
Wetlands				
Retaining administrative building and employee residence in wetlands and diverting runoff away from wetlands would continue a minor long-term adverse effect; long-term adverse effects from trampling of wetland near special permit campground once or twice a year would be negligible.	Removing special permit campground might benefit wetlands in the long term, a negligible effect.	Enlarging headquarters and moving parking lot to behind building would encroach on 0.04 acre of wetland, causing long-term loss of natural and beneficial values on less than 0.1 acre; building additions would disturb less than 0.5 acre in the short term, a minor adverse impact on wetlands.	Removing development and restoring natural and beneficial wetland values would result in a long-term moderate impact on wetlands.	Enlarging headquarters building would cause a loss of 0.04 acre of wetlands, a minor long-term adverse effect; building additions would disturb less than 0.5 acre in the short term, a minor adverse impact on wetlands.

Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Floodplains				
Presence of campground would continue to compromise natural and beneficial floodplain values, a major long-term adverse impact; minor to moderate risk of severe flooding could cause major adverse impacts on visitors involved.	Development in floodplains would compromise natural and beneficial floodplain values, a major long-term adverse impact; minor to moderate risk of severe flooding could cause major adverse impacts on visitors involved.	Removing campground and related structures and rehabilitating the 100-year floodplain would restore natural and beneficial values, a major long-term beneficial effect; removing campground also would have a major beneficial effect on visitors who might have been at risk.	Keeping 30 campsites in floodplain and replacing others with shuttle staging area would have major long-term adverse impacts on natural processes, partly offset by long-term minor beneficial effect of removing maintenance complex; minor to moderate risk of severe flooding could cause major adverse impacts on visitors involved.	Same as alternative 1.
Cultural Resources — Ethnographic Resources				
Ongoing long-term major adverse impacts would continue at the Tower, the entrance station, and other administrative and visitor use areas.	Ethnographic impacts mixed: removing upper parking lot to create pedestrian plaza, removing prairie dog pullouts, rehabilitating trails and disturbed areas, and allowing fewer people in special permit zone would cause long-term beneficial effects, as would rehabilitating west and closing north roads; requiring groups to register and reducing access to traditional areas (but not impeding traditional access) would have negligible long-term adverse effects; restoring special permit campground to natural conditions would result in minor long-term adverse impacts; construction and rehabilitation would cause short-term minor adverse impacts. On balance, alternative 2 would have long-term beneficial effects on ethnographic resources.	Construction would adversely affect ethnographic resources, a minor short-term impact; adding visitor use areas would cause some adverse impacts, as would adding a spur trail between the Red Beds and Joyner Ridge trails; however, a moderate long-term beneficial effect would result from removing the paved upper parking area, creating a pedestrian plaza, moving the main parking area farther away from Tower, decreasing prairie dog pullouts, rehabilitating trails, disturbed areas, and the developed campground, allowing fewer people at the base of the Tower at one time, reducing concentrations of people, establishing a shuttle system, and eliminating visitor access to the north and west roads.	Construction would adversely affect ethnographic resources, a short-term minor impact; adding visitor use areas and adding a spur trail between the Red Beds and Joyner Ridge trails would cause some adverse impacts; however, moderate long-term beneficial effects would result from removing paved upper parking area to create a pedestrian plaza, moving main parking area farther away from Tower, eliminating prairie dog pullouts, rehabilitating trails, disturbed areas, and 20 sites of developed campground, allowing fewer people at base of Tower at one time, reducing concentrations of people, establishing a shuttle system, eliminating visitor access to north road and eliminating west road.	More visitor access and associated development in several areas would detract from solitude sought for religious ceremonies; this alternative, which calls for the highest level of development, would compromise ethnographic resources of Tower area and degrade viewshed by increasing visitor use and vehicular traffic at the Tower and the Joyner Ridge access road and trailhead; ethnographic resources also compromised by paving trailer dropoff area and converting it for tour bus parking; these adverse effects on ethnographic resources would be moderate and long term.

Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Cultural Resources — ***Historic Resources***				
Visitor use and traffic congestion in the historic district and the modification of buildings for accessibility would continue long-term minor adverse impacts on historic resources.	The overall long-term impacts on historic resources from this alternative would be beneficial and minor to major.	Visual and auditory intrusions from construction would cause minor short-term adverse impacts on historic resources; removing paved parking area, establishing a pedestrian plaza, operating a shuttle at peak visitation times, and scheduling tour bus visits to the Tower would have moderate long-term beneficial effects on historic resources.	Visual and auditory intrusions from construction would cause minor short-term adverse impacts on historic resources; removing paved parking area, establishing a pedestrian plaza, operating a shuttle at peak visitation times, and scheduling tour bus visits to the Tower would have moderate long-term beneficial effects on historic resources; moving headquarters and maintenance to outside boundary would result in a moderate long-term beneficial effect on historic road corridor.	Visitor activity and traffic congestion would continue at historic district and in Tower viewshed, a minor adverse impact on historic setting at peak times;. adding parking lanes near prairie dog town, redesigning entrance area, and enlarging headquarters would modify historic road corridor, a moderate long-term adverse impact; redesigning entrance area would change setting of the national register-listed entrance station, and widening road near prairie dog town could alter CCC-built elements of historic road. Impacts cannot be known without knowing more design details; one or more actions could require additional mitigation and compliance with section 106 of National Historic Preservation Act.
Visitor Experience — ***Visitors' Experience of Monument Resources***				
Noise, vehicle smells, and inability to find a parking space would continue to degrade visitors' experience of the monument's prime resource; continuing these conditions would result in a major long-term adverse impact on visitors at peak use times; retaining campground would result in a moderate beneficial effect for visitors, many of whom value the peaceful experience of this pleasant, shady area	Reducing crowding and traffic would cause a major beneficial effect for most visitors in peak use season; converting one campground loop to parking for towed vehicles would reduce the number of available campsites; however, the adverse effect would be minor because seldom are all sites in use, and camping in other loop still would be available.	Managing visitation levels and using shuttle system at peak times would decrease crowding, noise, and disruption in Tower area and let visitors experience scenery without the pressures of driving; an opportunity many would enjoy and a major beneficial effect on visitor experience, especially in the peak season; removing campground would cause some visitors to lose the opportunity for an overnight experience in the monument, a long-term minor to moderate adverse impact because only a small percentage of visitors use the campground.	Managing visitation levels and using shuttle system at peak times would decrease crowding and noise in Tower area, lower use at peak times and increase it somewhat in off-peak times, let visitors experience scenery without driving pressures, which many would enjoy; adding a shuttle staging area outside monument would let visitors transition from highway driving to entering monument; reduced traffic and crowding would be a major benefit for visitor experience, especially in peak season; retaining one campground loop, long-term favorable effect, would be minor because few people affected.	Adding more parking spaces would reduce visitor frustration by making it easier to find parking easier; better design would improve safety and help traffic flow more efficiently, but congestion and noise would continue; better than existing conditions, but noise, traffic, and vehicle smells still would degrade experience of prime resource, a long-term moderate to major adverse impact on visitors at peak use times; improving Tower trail approach would be a major benefit for visitors who otherwise could not experience Tower; retaining campground and picnic area would be a moderate long-term beneficial effect because these facilities are popular with some visitors.

Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Visitor Experience — ***Access and Freedom to Go at One's Own Pace V***				
The Tower trail would continue to be inaccessible for some visitors, who could not have a close experience of the Tower, a major long term adverse impact for those visitors; visitors are free to come and go at their own pace in the monument, depending on availability of parking; many visitors to whom spontaneity is an important value perceive this freedom of movement as a long-term major beneficial effect.	Redesigning Tower trail approach would improve access for a significant number of visitors, a moderate to major beneficial effect; visitors could not come to the monument spontaneously at peak times, and some would be inconvenienced by not being able to come when they would prefer; some might be unable to visit at all if they could not get reservations to fit their schedules; public response to the concept of a reservation system indicates that such a system would result in a major adverse impact on visitors because many value spontaneity highly.	Redesigning Tower trail approach would improve access for a significant number of visitors, a moderate to major beneficial effect; visitors could not move around monument at own pace when shuttle system operating, and having a shuttle might increase cost of visiting Devils Tower; some people who prefer not to use shuttle might choose not to come; shuttle system would have a long-term major adverse impact on people who value spontaneity, privacy, and independence; impact mitigated somewhat because shuttle would operate only in peak use season, and shuttle use not required in mornings and evenings.	Same as alternative 3.	Redesigning Tower trail approach would improve access for a significant number of visitors, a moderate to major beneficial effect; this alternative would enable visitors to come and go around the monument at their own pace, depending on availability of parking; visitors who value spontaneity would perceive this freedom of movement as a long term major beneficial effect.
Visitor Experience — ***Access to Orientation and Interpretation***				
Facility limitations and crowded conditions would continue, and visitors would continue to be frustrated by inability to receive orientation and interpretive information.	Modifications at Tower area, reduced crowding, and improvements in prairie dog viewing area would enhance opportunities for ranger contact and more effective interpretation and dissemination of information.	Modifications at Tower area, reduced crowding, and improvements in prairie dog viewing area would enhance opportunities for ranger contact and more effective interpretation and dissemination of information; new programs and more in-depth treatment of some themes at shuttle staging area and on the shuttle itself would result in major long-term beneficial effects.	Same as alternative 3.	Tower visitor center too small for orientation and interpretation and could be reduced further by adding more restrooms; some interpretation available at enlarged headquarters building along main road, but facility limitations and crowding would continue visitor frustration at inability to receive desired orientation and interpretation; limits on interpretation would cause a long term moderate to major adverse impact on visitors.

Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Visitor Experience — ***Visitor Safety***				
Vehicle accidents in monument have been infrequent, and risks are considered minor to moderate, but any accident would result in major adverse impact on the people involved.	Less traffic at Tower area and eliminating prairie dog pullouts would reduce potential for vehicle-pedestrian accidents; reducing risks would have a long term beneficial effect because any accident would have a major adverse impact on the people involved.	Less traffic in Tower area and added pullouts on both sides of prairie dog town would reduce potential for vehicle and vehicle-pedestrian accidents; reducing risks would have a moderate long-term beneficial effect because any accident would have a major adverse impact on the people involved.	Less traffic in Tower area and along main road and eliminating prairie dog pullouts would reduce potential for accidents; realigning intersection of main road and new shuttle staging area access road would improve shuttle and visitor car safety; reducing risks would have a moderate long-term beneficial effect because any accident would have a major adverse impact on the people involved.	Some vehicle accidents could result from traffic congestion and the need to manipulate large vehicles in a small space; congestion and pedestrian activity at prairie dog town could jeopardize safety; risks are considered minor to moderate; however, any accident would be a major adverse impact on the people involved.
Socioeconomic Resources — ***Businesses and Neighbors***				
Devils Tower Trading Post and KOA General Store would continue to have a competitive advantage over other outlets farther from entrance, a moderate long-term beneficial effect on those businesses; owners of adjacent property who travel through monument might be inconvenienced by entrance station traffic at peak times, a minor adverse effect.	Devils Tower Trading Post and KOA General Store still would have a competitive advantage over outlets farther from entrance, a moderate long-term beneficial effect on those businesses; KOA and Tower view campgrounds could gain more revenue from campers displaced from monument, a minor beneficial long-term effect on those businesses; closing west road would eliminate one access/ egress route for one landowner, but adverse effect would be negligible because at least one alternate route exists.	Moving entrance station would allow more visitors (now prevented from stopping by peak-time traffic) to stop at adjacent businesses, a minor intermittent beneficial effect on adjacent businesses in the long term; private regional campgrounds might gain up to $102,500 per year in new business, a moderate long-term beneficial effect on local businesses.	Adding an entrance at shuttle staging area would allow more visitors (now prevented from stopping by peak-time traffic) to stop at adjacent businesses, a minor beneficial effect on adjacent businesses in the long term; private regional campgrounds might gain up to $12,500 per year in new business, a minor, long-term beneficial effect on local businesses.	Redesigning entrance area to improve traffic flow would allow more visitors (now prevented from stopping by peak-time traffic) to stop at adjacent businesses, a minor intermittent beneficial effect on adjacent businesses in the long term; owners of adjacent property would benefit from added pullouts on both sides of road at prairie dog town, a minor beneficial effect, but developing Joyner Ridge access road would make access to their property more difficult, a negligible long-term adverse impact; on balance, the effect of the latter two actions would be beneficial.

Alternative 1 (No Action)	Alternative 2	Alternative 3 (Preferred)	Alternative 4	Alternative 5
Socioeconomic Resources — ***Local and Regional Economy***				
Monument employment and expenditures are small compared to overall county economy, so effects of monument employment and expenditures would be negligible, long-term, and beneficial.	Negligible short-term beneficial effect on employment and minor short-term benefit for local and regional economy, including indirect effects on local businesses and tax revenues from construction; about 16 one-year jobs would add a payroll of about $500,000; total impact on Wyoming economy from construction up to $1,730,000; overall effect on region's employment from construction would be negligible.	Eliminating monument campground would increase area camping revenues by about $102,500 per year, a minor beneficial long-term effect on regional economy; annual taxable revenues from camping outside monument would increase about $102,500, a minor long-term beneficial effect for local taxing authorities; shuttle service would benefit local and regional employment opportunities, adding 8–29 jobs ($60,000–220,000), with indirect beneficial effects on local businesses and tax revenues; overall, shuttle service would add only a small percentage to regional jobs and earnings; construction effects on employment and local and regional economy would be beneficial, including indirect effects on local businesses and taxes; about 61 one-year construction jobs would be added, total payroll about $1.9 million; total effect on Wyoming economy from construction up to $6,574,000, adding only a small percentage to regional jobs and earnings; overall Devils Tower construction effects on regional employment, local businesses, and local and regional economy minor, beneficial, and short term; about $3.8 million circulated throughout regional economy would generate $2.090–2.774 million, a minor long-term beneficial effect.	Converting 20 campsites to other uses would increase area camping revenues by about $2,500 per year, a minor beneficial long-term effect on regional economy; annual taxable revenues from camping outside monument would increase about $12,500, a minor long-term beneficial effect for local taxing authorities; shuttle service would benefit local and regional employment opportunities, adding 8–29 jobs ($60,000–220,000), with indirect beneficial effects on local businesses and tax revenues; shuttle service would add only a small percentage to regional jobs and earnings; construction effects on employment and local and regional economy would be beneficial, including indirect effects on local businesses and taxes; about 61 one-year construction jobs would be added, total payroll about $1.9 million; total effect on Wyoming economy from construction up to $6,574,000, adding only a small percentage to regional jobs and earnings; overall Devils Tower construction effects on regional employment, local business, and local and regional economy minor, beneficial, and short term; about $3.8 million circulated throughout regional economy would generate $2.090–2.774 million, a minor long-term beneficial effect.	Construction effects on employment and local and regional economy would be beneficial, including indirect effects on local businesses and tax revenues; about 37 one-year jobs would be added, total payroll about $1.15 million; total effect on Wyoming economy from construction up to $3,979,000; adding only a small percentage to regional jobs and earnings; overall Devils Tower construction effects on regional employment, local businesses, and local and regional economy minor, beneficial, and long term.

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AFFECTED ENVIRONMENT

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NATURAL RESOURCES

SETTING

Devils Tower National Monument comprises 1,347 acres in northeastern Wyoming on the northwestern edge of the Black Hills. The flora and fauna of the monument are typical of the Black Hills region of South Dakota and surrounding areas in Wyoming (NPS 1992). The Belle Fourche River, which flows through the eastern side of the monument, is part of the Cheyenne River Basin. Devils Tower, one of the most conspicuous geologic features of the Black Hills region, is made up of igneous rock surrounded by sedimentary rock of the Spearfish, Gypsum Spring, and Sundance formations.

SOILS

Two general soil units found in the monument are (a) the floodplain/terrace soils, which consist primarily of very deep and nearly level loamy soils formed in alluvium, and (b) soils derived from sedimentary rock such as siltstone, sandstone, and shale that are loamy and primarily deep to very deep, on 6%–30% slopes. The soil survey for Crook County describes none of the soils as unusual or suitable for development. Most of the soils are described as having high erosion hazard, and some are susceptible to landslide.

VEGETATION

Ponderosa pine forests and woodlands grow in about 62% of the monument. Other species common to the pine forest are common juniper, Oregon grape, poverty oatgrass, needle-and-thread grass, western wheatgrass, porcupine grass, big bluestem, green needlegrass, and Kentucky bluegrass. Prairie grasslands of six different types cover about 29% of the monument; they occur in small pockets and patches within the ponderosa pine community.

About 5% of the monument supports deciduous woodlands. The deep, shady drainage trending southwest to northeast along the south leg of the Joyner Ridge trail is composed of pine forest above, grading into deciduous woodland. Species found in the deciduous woodland are bur oak, green ash, chokecherry, hawthorn, American plum, serviceberry, stickseed, treacle mustard, and others. Large cottonwoods in the area of the Belle Fourche River campground create shade and provide habitat for wildlife, including many birds.

The monument is plagued by many invasive exotic plants, some of which the state of Wyoming has designated noxious. The National Park Service has developed strategies to control some of these species. The monument has three main noxious weed species of concern: Canada thistle, leafy spurge, and houndstongue are common understory species in deciduous woodlands and prairie edges.

WILDLIFE

The most common animals using or inhabiting Devils Tower are porcupine, white-tailed deer, red squirrel, least chipmunk, deer mouse, yellow-bellied racer, and bullsnake. Common breeding birds are wild turkey, mourning dove, hairy woodpecker, northern flicker, western wood-pewee, violet-green swallow, bluejay, black-capped chickadee, white-breasted nuthatch, red-breasted nuthatch, brown creeper, American robin, mountain bluebird, Townsend's solitaire, solitary vireo, yellow-rumped warbler, ovenbird, western tanager, chipping sparrow, dark-eyed junco, red crossbill, and pine siskin.

Fences along the monument boundary, development in the monument, and the presence of visitors and employees interrupt wildlife habitat and alter wildlife movement. Of these factors, the fences used by private landowners to restrict movement of their cattle probably cause the greatest impact on wildlife by restricting their movement.

AIR QUALITY

Devils Tower National Monument is classified as a class II area under the National Clean Air Act of 1977. In a class II area, moderate degradation of air quality is allowed. The Department of the Interior has identified the monument as possessing air quality-related values. Air quality is excellent in the area except during the fire season in the western United States, when smoke from distant fires contributes to regional haze.

THREATENED, ENDANGERED, AND CANDIDATE SPECIES

The state of Wyoming maintains no list of endangered, threatened, or other special species. Although the U.S. Fish and Wildlife Service has listed them as potentially occurring in the monument, black-footed ferret, mountain plover, and Ute ladies' tresses have not been found in Devils Tower. Bald eagles do not nest at Devils Tower (see "Impacts Considered But Dismissed"). The black-tailed prairie dog is the only special species that might be affected by actions discussed in this document (see appendix D).

The U.S. Fish and Wildlife Service has identified the black-tailed prairie dog (*Cynomys ludovicianus*) as proposed for listing as threatened. Devils Tower contains a black-tailed prairie dog town of about 34 acres along both sides of the main road to the Tower, and it is a primary visitor attraction. An interpretive trail goes around the prairie dog town, part of which is outside the trail. The primary resource management issues associated with prairie dogs are that they burrow into visitor use areas such as the campground, and visitors feed them human food. Some prairie dogs are killed by vehicles. This occurs more often during times of lower vehicle traffic, perhaps because a more constant flow of traffic keeps prairie dogs from trying to cross the roads.

The colony of black-tailed prairie dogs at Devils Tower has never been found to carry bubonic plague; therefore, they could not transmit plague to visitors.

WETLANDS

The National Wetlands Inventory and map show two wetlands in Devils Tower National Monument. One is just south of the entrance road; the other is the old sewage lagoon north of the Tower. Other areas in the monument contain wetland indicator species. NPS employees surveyed these areas in June 2000 to locate wetlands. Wetland areas were found on the first river terrace near the primitive campground, at the south side of the bridge within the old river channel (perhaps the same as one identified in the national wetlands inventory), at the administrative building and nearest residence, and behind and to the west of the maintenance facility. See appendix E, "Statement of Findings for Wetlands."

FLOODPLAINS

The monument's *Resources Management Plan* (NPS 1992) indicates that the Wyoming Department of Environmental Quality has classified the Belle Fourche River as a class II river, which means that the river can support game fish. The Wyoming Game and Fish Department classified the river as a warm water fishery and determined that the supply of aquatic food is poor (NPS 1992).

The Keyhole Dam and reservoir on the Belle Fourche River are 17.8 miles upstream from the monument. Belle Fourche River flows have been regulated since the dam's completion in 1952. Water is released from Keyhole Reservoir in response to irrigation and flood control needs. River regulation has affected riparian habitats and geomorphological processes in the monument. The National Park Service does not possess water rights for maintaining minimum flows in the river (NPS 1992).

The Army Corps of Engineers completed a flood analysis of the Belle Fourche River through the monument in 1985. In July 2000 the Water

Resources Division of the National Park Service performed further analysis to identify the flood hazard associated with specific sites. The difference in elevation between specific locations and the river channel was measured and compared to the estimated flood depths from the Corps study. The NPS analysis found that the maintenance facility, including fuel storage, is within the 500-year floodplain. The propane tank field near headquarters is within the 100- and 500-year floodplain. The Belle Fourche River campground is in the 100-year floodplain. If a 100-year flood occurred in the campground, the depth of water would be 2 to 4 feet and of moderate velocity. These conditions would be hazardous to campground occupants; however, there is a convenient escape route to higher ground toward the northwest.

The *Crook County Emergency Plan,* part of the *Wyoming Hazard Identification and Risk Assessment Survey* of 1996, evaluates the likelihood of risk to people and property for many types of hazards. Keyhole Dam is a type 1, "high hazard" dam. Because it would contain floodwaters, the dam makes it unlikely that a flood of 100-year magnitude would reach Devils Tower National Monument. Should the dam fail, a "significant loss of life" and "excessive economic loss" would be possible, according to the definition of a "high hazard dam." The emergency plan indicates that "In the event of a dam breach at Keyhole, it will be approximately three hours before floodwaters reach Devils Tower National Monument and four hours before floodwaters reach Hulett." This amount of warning would allow visitors ample time to vacate the campground and reach nearby higher ground.

Several potential occurrences could put campers in the floodplain in danger even though safety precautions might have been taken. If the Keyhole Dam was at capacity and rain occurred, causing a flood event on one or more tributaries of the Belle Fourche River between the dam and Devils Tower, the dam would not contain the floodwaters, and there could be flooding in the campground. Communications might not always be fully comprehended or acted upon, and miscommunications or misunderstandings could put visitors at risk.

The 1987 *Safety Evaluation of Existing Dams (SEED): Keyhole Dam* report (Bureau of Reclamation 1987) presents a comprehensive assessment of the past performance and current condition of Keyhole Dam, including analysis of downstream flooding. The *Emergency Preparedness Plan* says the following:

> Failure or misoperation of the dam could result in large losses of life and property. The Villages of Hulett, Wyoming (population 429), and Belle Fourche, South Dakota (population 4,200), are located approximately 20 and 80 miles downstream, respectively, and would be inundated by a failure flood. Several smaller communities and private residences located in proximity to the river would also be included in the anticipated inundation zone.

CULTURAL RESOURCES

ETHNOGRAPHIC RESOURCES

American Indians revered the Tower during the historic period, and many continue to value it as an important sacred place. In addition, evidence exists that during both the historic and contemporary periods, successive generations of American Indian groups have returned to the Tower and its surrounding landscape to carry out traditional rituals and ceremonies.

Devils Tower has been found eligible for listing as a traditional cultural property because it is significant for its association with the ideology, beliefs, rituals, and sacred narratives of several American Indian tribes, including the Lakota, Crow, Cheyenne, Arapaho, Kiowa, and Eastern Shoshone. Ethnohistorical data and ethnographic research have directly linked the site with the traditional beliefs of several Northern Plains tribes. Several versions of creation stories exist explaining the origins of the Cheyenne, Kiowa, and Arapaho. To the Lakota, the Tower is a sacred place of renewal and continues to be the subject of the Sun Dance, which is performed during the summer solstice. Individuals and groups of several tribes have conducted traditional ritual activities at the Tower, which include vision quests, sweat lodge rites, fasting, and praying by the Crow and Lakota; possible burials by the Arapaho and Cheyenne; and group rituals such as the Sun Dance of the Lakota.

The Tower is also significant for its association with gods and demigods who figure importantly in tribal traditions and are central to tribal creation narratives. These gods and demigods include Mato, the Great Bear, the Lakota god symbolizing wisdom, who imparted the sacred language and ceremonies of healing to Lakota shamans at Devils Tower, thus making it the birthplace of wisdom and an important connection between the tribe and the cosmos. To the Kiowa, Crow, and Arapaho, the Tower is similarly associated with legends involving the Great Spirit, the transformation of a human to a bear, and the creation of the Tower itself or of constellations.

Although the Tower trail, which encircles the base of the Tower, marks the extent of the current traditional cultural property determination of eligibility, it is likely that other sites related to the traditional cultural use of the Tower exist outside this boundary and will be the subject of further ethnographic study and evaluation.

It has been determined that June is the most sensitive month for American Indian traditional religious activities at the Tower. Acknowledging the American Indian cultural values attached to Devils Tower, the National Park Service implemented a climbing management plan in 1995 that requested that climbers voluntarily refrain from climbing in June each year out of respect for Indian traditional activities and beliefs. The plan also called for an expanded interpretive program at the monument to explain to the public the monument's cultural significance to numerous tribes.

The *Ethnographic Overview and Assessment of Devils Tower National Monument, Wyoming* (Hanson and Chirinos 1997, 33) recommends that, subject to consideration and approval by the Lakota, the National Park Service consider nominating the Sun Dance grounds to the National Register of Historic Places. Inclusion on the register could help ensure the protection of the area for the continuation of this sacred Lakota ceremony.

Tribes usually bring plants and other materials for ceremonial use into the monument from outside. They harvest materials in the monument only occasionally.

HISTORIC RESOURCES

The visitor center area contains several historic resources dating back to 1917, when the original grade was cut for the national monument road.

Development of monument facilities gained momentum during the 1930s with establishment of a Civilian Conservation Corps (CCC) camp at the monument. Between 1933 and 1938 the corps built a number of visitor and monument facilities, including the present entrance road. The visitor center (also known as old administration building, HS-3, and the museum) was completed in 1935. The ranger office (also known as the custodian's residence) a few hundred feet north of the visitor center, was initially completed in 1931. In 1996 the garage of this former staff residence was converted into fully accessible public restrooms. The CCC-constructed fire-hose house is between these two buildings, and on July 24, 2000, the three log and stone structures collectively were listed on the National Register of Historic Places as the Old Headquarters Area Historic District. The CCC-era water delivery system and sewage disposal system of the visitor center area were judged ineligible for listing, as was the monument's trail system.

A multiple property nomination for a number of the monument's cultural resources was prepared for listing on the National Register of Historic Places on July 24, 2000. These properties are the entrance road, the entrance station (a log structure), the Old Headquarters Area Historic District, and the Tower ladder.

VISITOR EXPERIENCE

EXPERIENCING THE RESOURCES

Since the CCC days, when the monument's facilities were constructed, visitation has increased twentyfold (see figure 1). Annual visitation over the past ten years has neared or exceeded 400,000. Nearly three fourths of the year's visitation occurs during June, July, and August.

Most visitors to Devils Tower enjoy photographing the Tower, hiking area trails, camping, picnicking, and wildlife viewing. Approximately 5,000 technical rock climbers scale the Tower each year. A large proportion of visitors walk the Tower trail, the main access route to view the Tower. Only a very small number of visitors hike the other trails, including the Joyner Ridge trail and the Red Beds trail.

Camping is available in the monument from April through October. The staff reports that the campground is rarely filled to capacity. This anecdotal evidence is consistent with NPS statistics, which show the five-year average annual use of the Devils Tower campground at 2,300 tents and 1,800 recreational vehicles, or a total of 4,100 occupied campsites per year. The capacity of the campground through the entire camping season is approximately 10,500 campsites.

In the summer of 1999 the University of Minnesota Cooperative Park Studies Unit (CPSU) gathered information about monument visitors. Survey participants represented visitors who come throughout the summer, not only during peak use times. The purpose of the study was to better understand the experiences that visitors sought and attained. Information was gathered on what activities visitors engaged in, their opinions about the quality and adequacy of available facilities, their ideas about strategies to address problems associated with management (such as alternative transportation systems), and their background characteristics.

Participants were asked about the importance of various experiences. Respondents rated enjoying area scenery the most important experience. Slightly more than 80% of the respondents reported that they had met their goal of enjoying the scenery. About 70% of the respondents said that "experiencing natural quiet" was "important" or "very important." Approximately 40% reported this goal fully attained; approximately 55% reported it as "somewhat" or "moderately" attained. Nearly 70% of the respondents listed "getting away from the usual demands of life" as important or very important. Approximately 60% reported that goal fully attained; about 40% indicated that they had "somewhat" or "moderately" achieved that goal.

Existing parking and visitor facilities at the Tower area are too small to accommodate visitation during the peak season. As a result, the area is congested and noisy. Parking is particularly difficult for visitors with large or towed vehicles. Sounds and smells from autos and buses mask natural sounds and smells. The overall experience at peak use times is crowded and frustrating and, for many visitors, inconsistent with the significance and meaning of the Tower. Because there are not enough restrooms, some visitors spend long periods waiting in line to use them.

FREEDOM TO GO AT ONE'S OWN PACE

Visitors were surveyed about the problems that they encountered during their visit. About 30% of those questioned identified the congestion in the parking area at the base of the Tower and the visitor center as a moderate to very serious problem. Similarly, about 30% of the respondents listed congestion at the prairie dog town and the entrance station as a problem. About 60% listed "recreating in a safe area" as important or very important. About 30% reported this goal only somewhat or moderately attained, and about 70% fully attained this goal.

Most visitors come to Devils Tower as a part of a larger regional travel itinerary. Many are en route between Mount Rushmore National Monument and Yellowstone National Park. This leaves them with limited time to spend at Devils Tower, and many value the ability to keep their time spent at the monument very flexible.

ORIENTATION AND INTERPRETATION

In the 1999 visitor study results, visitors highly valued the interpretation of monument resources. Between 70% and 85% of respondents indicated that learning about geology, natural history, and cultural history were important or very important to their visit. Responses that these goals were only somewhat to moderately attained ranged from about 50% to about 65% of the respondents. Between 30% and 50% of the respondents rated these goals as fully attained.

Interpretive media at the visitor center are outdated and ineffective. The facility is too small to accommodate orientation and interpretive functions. Outside the visitor center, in the Tower area, interpretive programs are hampered by inadequate space and disruption from crowding, noise, and traffic. Wayside exhibits and brochures at the prairie dog town provide interpretive information, and sometimes roving interpreters are stationed in the area. The staff also offers interpretive programs at the amphitheater near the Belle Fourche River campground. In summer visitors are contacted at the entrance station and at the visitor center. Some stop at the administrative headquarters to ask questions. In winter, when the visitor center is closed and the entrance station is not staffed, headquarters serves as the only visitor contact point.

SAFETY

Traffic congestion in the monument presents the potential for vehicle accidents, which could occur in the roadway and parking areas at the base of the Tower and along the road in the prairie dog town. Although accidents have been infrequent, if traffic congestion continues to worsen, the likelihood of accidents could increase.

SOCIOECONOMIC RESOURCES

BUSINESSES AND MONUMENT NEIGHBORS

There are several private businesses at or near the monument entrance, including gift shops and a privately operated campground. A bed and breakfast establishment is on private land just outside the northwest corner of the monument. Most other adjacent lands are ranches.

Two private landowners cross the monument to reach their property. One of them passes through as many as three or four times a day.

LOCAL AND REGIONAL ECONOMY

The economy in the Devils Tower National Monument area is based mainly on agriculture, sheep and cattle ranching, cut timber processing and tourism. The nearest town, Hulett, 10 miles northeast of the monument, has a population of 429 (NPS 1992). Other Wyoming towns in the vicinity are Sundance (28 miles southeast) and Moorcroft, (37 miles southwest).

The main local attractions are Devils Tower National Monument, the Bear Lodge District of the Black Hills National Forest, and the November deer hunting season. Goods, services, and accommodations are available at several of the local towns.

March 2000 unemployment rates in the Devils Tower region were higher than the statewide unemployment rate of 4.0% (4.4% in Campbell County, 6.8% in Crook County, and 5.4% in Weston County). This is not considered abnormal for the region. It is also important to note that regional unemployment rates typically decline with seasonal employment in spring and summer, when most construction takes place.

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ENVIRONMENTAL CONSEQUENCES

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METHODOLOGY FOR ANALYZING IMPACTS

The planning team based this impact analysis and the conclusions in this part largely on the review of existing literature and studies, information provided by experts in the National Park Service and other agencies, and Devils Tower staff insights and professional judgment. The team's method of analyzing impacts is further explained below. It is important to remember that all the alternatives include mitigating measures to minimize or avoid impacts. If mitigating measures described in the alternatives chapter were not applied, the potential for resource impacts and the magnitude of those impacts would increase.

Effects can be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably foreseeable. Cumulative effects are the impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time.

Impact intensity is the degree to which a resource would be is positively or negatively affected. The criteria that were used to rate the intensity of the impacts for each resource topic are presented below under each topic heading. They are also shown in table 6, at the end of the "Methodology" section.

Impact duration refers to how long an impact topic would last. For the purposes of this document, the planning team used the following terms to describe the duration of the impacts:

> *Short-term:* The impact would last less than one year, normally during construction and recovery.
>
> *Long-term:* The impact would last more than one year, normally from operations.

The normal life of a general management plan is assumed to be 15 to 20 years.

PROJECTS THAT MAKE UP THE CUMULATIVE IMPACT SCENARIO

A cumulative impact is described in regulation 1508.7 of the Council on Environmental Quality (CEQ), as follows:

> A "cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

To determine potential cumulative impacts, projects in the area surrounding Devils Tower were identified. The area included Crook County, Wyoming, and nearby lands administered by the state, the Bureau of Land Management, and the U.S. Forest Service. Projects were determined by meetings and phone calls with county and town governments and federal land managers. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented or would be implemented in the reasonably foreseeable future.

These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of each alternative to determine if they would have any additive effects on a particular natural, cultural, visitor use, or social resource. Because most of these cumulative actions are in the early planning stages, the evaluation of cumulative effects was based on a general description of the project.

Past Actions

The following past actions could contribute to cumulative effects.

Agriculture and ranching outside the monument, mostly ranching, have greatly reduced native prairie plants and animals in favor of cattle and sheep and the vegetation they prefer for food. This in turn has led to the alteration of soil and the loss of soil through erosion. Fences have been built near the monument boundaries and elsewhere to limit the movement of animals, principally cattle and sheep. Along with ranching has come the use of herbicides to kill unwanted plant species and the introduction of exotic species of plants. The monument's use of herbicides to control exotics contributes to overall herbicide use in the area

Between October 1999 and February 2000, 9 of 11 state fish and wildlife agencies within black-tailed prairie dog range signed a memorandum of understanding on the conservation and management of black-tailed prairie dogs in North America. The memorandum text includes this statement:

> "The affected State Fish and Wildlife Agencies agree that cooperative efforts are necessary to collect and analyze data on black-tailed prairie dogs and their habitats so that comprehensive state plans may be formulated and implemented to maintain the broadest distribution and greatest abundance possible within the fiscal realities of the state agencies and cooperating partners.

Among the actions for carrying out the program is the "development of cooperative partnerships with interested individuals, and private, state, tribal, and federal land managers." These efforts could lead to incentives that might induce ranchers to have prairie dog colonies on their lands (see appendix F).

The Keyhole Dam and reservoir are 17.8 miles upstream from the monument. Belle Fourche River flows have been regulated since the dam's completion in 1952. Water is released from Keyhole Reservoir in response to irrigation and flood control needs. River regulation has affected riparian habitats and geomorphological processes in the monument. The National Park Service does not possess water rights for maintaining minimum flows in the river (NPS 1992).

Current and Future Actions

Current actions and those projected for the future also could contribute to cumulative effects.

The Black Hills National Forest, the monument's largest land managing neighbor, has the *Land and Resource Management Plan for the Black Hills National Forest.* The forest encompasses 1.23 million acres, including the Bearlodge Mountains in northeastern Wyoming and most of the Black Hills in western South Dakota. In 1996 the *Final Environmental Impact Statement for the Land and Resource Management Plan* for the forest was completed. The purpose of this plan is to direct all natural resource management activities in the forest.

Land around Devils Tower National Monument could be developed for residential, business, or other use. No plans to do so are known at this time.

A National scenic byway was proposed by the U.S. Forest Service to be established in the vicinity of the national monument. The proposal has been withdrawn because of opposition from local citizens.

Repaving the main monument road is being considered. The National Park Service is preparing an environmental assessment about repaving 2.8 miles of Wyoming Highway 110 between the monument boundary and the visitor center at the Tower. The road would be widened 1 foot on each side, to a width of 22 feet, from the eastern edge of the prairie dog town to the Tower. The roadway would remain on its existing previously disturbed bench, and the centerline would remain in its current position along most of the road's length. However, in several areas the road would be shifted slightly to avoid

construction impacts on historic culvert headwalls. One historic culvert would be buried in place, and drains would be added to correct erosion problems adjacent to the culvert. The visitor center parking area at the end of WY 110 would be resurfaced, and the oversize-vehicle parking area immediately north of the visitor center would be widened and paved. Parking lot curbs would be modified to provide access for people with disabilities.

IMPAIRMENT OF RESOURCES

In addition to determining the environmental consequences of the preferred alternative and other alternatives, section 1.4 of NPS *Management Policies 2001* (NPS 2001a) requires that potential effects be analyzed to determine whether or not proposed actions would impair the resources of the unit.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve resources and values. National Park managers must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on the resources and values. However, the laws do give the National Park Service the management discretion to allow impacts on the resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. Although Congress has given the National Park Service this management discretion, that discretion is limited by the statutory requirement that the National Park Service must leave the resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of the resources and values, including the opportunities that otherwise would be present for the enjoyment of those resources or values. An impact on any resource or value may constitute an impairment. An impact would be most likely to constitute an impairment if it affected a resource or value whose conservation would be (a) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, (b) key to the natural or cultural integrity of the park or to opportunities to enjoy it, or (c) identified as a goal in the park's general management plan or other relevant NPS planning documents. Impairment might result from NPS activities in managing a park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park. In this document, a determination on impairment is made in the conclusion section for each impact topic in the "Environmental Consequences" chapter.

Natural Resources

The impact topic of natural resources includes discussions of the effects on the integrity of natural systems, including soils, vegetation, wildlife, air quality, and natural sound; threatened, endangered, and sensitive species; and wetlands and floodplains. Threatened, endangered and sensitive species are those listed by the U. S. Fish and Wildlife Service as threatened, endangered, or proposed for listing under the Endangered Species Act. Sensitive species also include state-listed plants and animals; however, Wyoming does not maintain a list of sensitive species. Wetlands are " . . . lands where saturation with water is the dominant factor determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface" (USFWS 1979). Floodplains are defined by the NPS *Floodplain Management Guideline* (1993a) as "the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, and including, at a minimum, that area subject to temporary inundation by a regulatory flood."

Information on known resources was compiled. Where possible, map locations of sensitive resources were compared with the locations of proposed developments and modifications. Pre-

dictions about short-term and long-term site impacts were based on previous studies of visitor and facilities development impacts on natural resources. Sociological studies comparing the deterrent effects of signs versus ranger presence on sites were also considered in this analysis.

The definitions presented below assume that mitigation would be implemented. For this document, the planning team qualitatively evaluated the impact intensity for natural resources, except threatened and endangered species, as follows:

Negligible: The impact would be localized and not detectable, or would be at the lowest levels of detection.

Minor: The impact would be localized and slightly detectable but would not affect overall structure of any natural community.

Moderate: The impact would be clearly detectable and could have an appreciable effect on individual species, communities, and/or natural processes.

Major: The impact would be highly noticeable and would have a substantial influence on natural resources, including impacts on individuals or groups of species, communities, and/or natural processes.

The following categories were used to evaluate the potential impacts on threatened, endangered, or proposed species:

Negligible: The action would result in a change to a population or individuals of a species that would be so small that it would not be of any measurable or perceptible consequence to the population or other changes that would be so small that they would not be measurable or perceptible.

Minor: The action would result in a change to a population or individuals of a species that, if measurable, would be small and localized, or other changes that would be slight but detectable.

Moderate: The action would result in a change to a population or individuals of a species that would be measurable but localized.

Major: The action would result in a change to a population or individuals of a species that would be measurable and have a permanent consequence to the population.

Cultural Resources

In this impact analysis, cultural resources consist of two property types, ethnographic and historic resources. The topics of archeological resources and cultural landscapes were dismissed (see "Topics Dismissed from Further Consideration" in the "Alternatives" chapter.

Section 106 of the National Historic Preservation Act requires that federal agencies take into account the effects of their undertakings on properties included on or eligible for inclusion on the National Register of Historic Places. Agencies also must give the Advisory Council on Historic Preservation a reasonable opportunity to comment. This also applies to properties not formally determined eligible, but which are considered to meet eligibility criteria. All NPS undertakings affecting historic properties are subject to the provisions of the 1995 programmatic agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers. Applicable legislation and regulations and specific management procedures regarding cultural resources are detailed in the National Park Service's *Cultural Resource Management Guideline* (Director's Order No. 28, 1998).

The assessment of impacts on cultural resources is based on the regulations of the Advisory Council on Historic Preservation (36 CFR 800). These include: (1) identifying the areas that could be affected, (2) comparing that location with the location of resources listed, eligible, or potentially eligible for listing on the National Register of Historic Places, (3) identifying the

extent and type of effect, (4) assessing those effects according to procedures established in the Advisory Council's regulations, and (5) considering ways to avoid, reduce, or mitigate adverse effects.

In this document, effects on cultural resources are described in terms consistent with the regulations of the Council on Environmental Quality (CEQ) for implementing the National Environmental Policy Act (NEPA). The National Park Service intends to comply with requirements of NEPA and section 106 of the National Historic Preservation Act.

CEQ regulations require that the impacts of alternatives and their component actions be disclosed. Consistent with those regulations, the analysis of individual actions includes identification (for example, the degradation or disturbance of ethnographic resources caused by visitor activities) and characterization of impacts. Characterization includes a discussion of the type (beneficial or adverse), duration (short-term, long-term, or permanent), and intensity of impact. The intensity of impacts in the cultural resource analysis is rated by the following terms.

> *Negligible:* The impact would be barely perceptible and not measurable; it would be confined to small areas or would affect a single contributing element of a larger national register district with low data potential.
>
> *Minor:* The impact would be perceptible and measurable, would remain localized and confined to a single contributing element of a larger national register district with low to moderate data potential, or would not affect the character-defining features of a national register eligible or listed property.
>
> *Moderate:* The impact would be sufficient to cause a change in a character-defining feature but would not diminish the integrity of the resource to the extent that its national register eligibility would be jeopardized, or it generally would involve a single or small group of contributing elements with moderate to high data potential.
>
> *Major:* the impact would result in substantial and highly noticeable change in character-defining features, which would diminish the integrity of the resource to the extent that it would no longer be eligible for listing on the National Register of Historic Places, or it would involve a large group of contributing elements and/or individually significant property with exceptional data potential.

Moreover, CEQ calls for a discussion of the "appropriateness" of mitigation. DO-12, the National Park Service's NEPA guideline, requires an analysis of the *effect* of mitigation. The resultant reduction in intensity from mitigation is an estimate of the effectiveness of mitigation under NEPA.

For NEPA purposes, the mitigation discussed in this document includes avoiding, minimizing, rectifying, or compensating for the impact. Every effort would be made to avoid adversely affecting cultural resources through avoidance. When avoidance would not be feasible or prudent and the undertaking might result in adverse impacts, a number of other mitigative measures could be employed.

Mitigative measures might include applying the *Secretary of the Interior's Standards,* developing and implementing design standards to ensure compatibility, using design methods such as screening with vegetation when placing new facilities in a historic district, and documenting according to standards of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) as defined in the October 1, 1997, *Reengineering Proposal*. For archeological resources, mitigation would include recovering information that would make sites eligible for inclusion on the National Register of Historic Places. When demolishing a historic structure was proposed, the architectural elements and objects might be salvaged for reuse in rehabilitating similar structures, or the elements and objects might be added to the monu-

ment's museum collection. In addition, the National Park Service could prepare the story of the history of the alteration of the human environment and the reasons for that alteration, and that story could be used in interpretation.

Under section 106 of the National Historic Preservation Act, an impact on historic properties is either adverse or not adverse. Adverse effects under section 106 may also be partially or completely mitigated; however, unlike NEPA analysis, the effect cannot be reduced and remains an adverse effect. To comply with this difference in terminology for section 106, an additional "Section 106 Summary" discussion has been added for each subheading under the impacts on cultural resources for each alternative. The require determination of effect for the undertaking (implementation of the alternative) is included in the "Section 106 Summary" sections for each alternative.

Effects under both the National Environmental Policy Act and the National Historic Preservation Act are considered adverse when they diminish the significant characteristics of a historic property.

The National Park Service will continue to consult with affiliated Indian tribes to develop appropriate mitigation strategies for effects on ethnographic resources. Such strategies could include continuing to provide access to traditional use or spiritual areas and screening new development from traditional use areas.

Visitor Experience

The discussions of the visitor experience in this document cover the effects on: visitors' ability to experience the monument's primary resources and their natural setting (including vistas, natural sounds and smells, and wildlife); overall visitor access to the monument, and the freedom to experience the resources at one's own pace. Also discussed are visitors' access to appropriate orientation and interpretive information and the effects of proposed actions on visitors' safety.

Information gathered in the survey discussed under "Visitor Experience" earlier in this chapter was used, along with public input during the planning process, to evaluate the potential impacts of each alternative on visitors.

Public responses to newsletters have supported the findings of the University of the University of Minnesota survey. Visitors have expressed concern about crowding and scenic quality. Freedom to experience the monument on their own schedules and at their own pace has frequently been mentioned as an important factor in their visit.

Consultation with American Indian groups has revealed that these groups are concerned about crowding and noise near the Tower, and that they want to participate in traditional cultural activities with a minimum of visual and auditory intrusions.

For analysis purposes, impact intensities for visitor experience impact topics have been defined as follows:

> *Negligible:* The impact would be barely detectable, would not occur in primary resource areas, or would affect few visitors.
>
> *Minor:* The impact would be slight but detectable, would not occur in primary resource areas, or would affect few visitors.
>
> *Moderate:* The impact would be readily apparent, would occur in primary resource areas, or would affect many visitors.
>
> *Major:* The effect would be severely adverse or exceptionally beneficial, would occur in primary resource areas, or would affect the majority of visitors.

Socioeconomic Resources

The discussion of socioeconomic effects consists of the effects of each alternative on: businesses, access to private property, and the local and regional economy. The following information

and assumptions were used to analyze impacts on local businesses.

First, an estimate was made of the amount of revenue the monument would receive in one year from camping. Next, an estimate was made of the revenue that the KOA campground near Devils Tower would receive in one year for the same number of stays.

Camping at Devils Tower. NPS data show the use rates for the Devils Tower National Monument campgrounds from 1994 to 1999 (see table 3). Using this information, the following estimate was made: 4,100 occupied sites (2,300 tents and 1,800 recreational vehicles) per year.

The estimated number of occupied tent and recreational vehicle (RV) sites was used with the estimate of camping costs at Devils Tower and KOA to determine the amount of revenue the monument would lose from removing campsites, the amount of revenue other campgrounds might receive if campers who were displaced from the monument chose to camp near Devils Tower, and the amount of revenue on which local authorities would collect tax (tables 4 and 5, below).

Camping Costs at Devils Tower and KOA. According to data on the KOA web site (www.koa.com), camping rates at the Devils Tower KOA are as shown in table 4.

The cost of camping at Devils Tower National Monument, including entry fees (according to data on the National Park Service web site — www.nps.gov), is shown in table 5.

According to these data, the estimated nightly camping fees are $25 at KOA and $20 at Devils Tower National Monument. This analysis also relies on anecdotal evidence provided in public comment and by the monument staff.

The campground at Devils Tower has revenues of roughly $82,000 per year (4,100 occupied sites per year multiplied by $20 per site).

If all the campers who camp at Devils Tower National Monument camped at KOA, that campground's revenues would increase by $102,500 per year (4,100 x $25 per site).

Effects on Local and Regional Economy. The following information and assumptions were used to analyze impacts on the local and regional economy:

These facts were used to translate construction spending into number of jobs created and to change jobs into changes in income and dollar input into the local and regional economy.

TABLE 3: OVERNIGHT STAYS AT DEVILS TOWER NATIONAL MONUMENT

	Number of Tents	Number of Recreational Vehicles	Number of Tent Campers	Number of RV Campers
1995	4,900	5,583	16,468	19,010
1996	2,811	2,116	9,368	6,951
1997	2,425	1,892	7,982	6,201
1998	1,960	1,669	6,516	5,505
1999	2,442	1,838	8,056	5,999
Range	1,960–4,900	1,669–5,583	6,516 – 16,468	5,505 – 19,010
Median	2,442	1,892	8,056	6,201
Mean (1995–1999)	2,908	2,620	9,678	8,733
Mean (1997–1999)	2,276	1,800	7,518	5,902
Impact Analysis Estimate	2,300	1,800	7,500	6,000

TABLE 4: CAMPING COSTS AT KOA NEAR DEVILS TOWER

Tent site (2 adults)	$20.00
RV site	$23.00–28.00
Kamping Kabin	$35.00
Extra people: Child (17 and under) Adult (18 and over)	$ 2.50 each $ 3.50 each

TABLE 5: CAMPING COSTS AT DEVILS TOWER NATIONAL MONUMENT

Entry fee (automobile)	$ 8.00
Entry fee (per person)e	$ 3.00
Camping fee (tent or RV)	$12.00

Construction Jobs per $1 Million in Construction Spending. According to the Wyoming Department of Employment, construction jobs pay approximately $13 per hour ($12.41 per hour).

- Working 50 weeks at 40 hours per week results in 2,000 annual hours.
- Two thousand hours at $13 per hour equals $26,000 per year.
- Assuming benefits equal to 25% of annual wages would add $6,500 to the cost of each laborer, resulting in a total salary and benefits package of $32,500 per construction job.
- Based on industry standards, 50% of construction spending is for labor; therefore, for $1 million in construction spending, $500,000 would go to labor.
- At $32,500 per job, $500,000 in labor spending (or $1 million in total construction spending) would result in 15.4 jobs.
- This study uses 16 jobs per $1 million in construction spending to account for rounding up to $13 per hour in construction wages.

For analysis purposes, the intensities for impacts on businesses, access to private property, and the local and regional economy will be defined as follows:

Negligible: The impact would not be detectable and would have no discernible effect on the socioeconomic environment.

Minor: The impact would be slightly detectable but would not affect the overall socioeconomic environment.

Moderate: The impact would be clearly detectable and could have an appreciable effect on the socioeconomic environment.

Major: The impact would have a substantial, highly noticeable, potentially permanent influence on the socioeconomic environment.

The criteria that were used to rate the intensity of the impacts for each resource topic are presented in table 6.

TABLE 6: CRITERIA FOR RATING SEVERITY OF IMPACTS

	Natural Resources	Threatened, Endangered, or Candidate Species	Cultural Resources	Visitor Experience	Socioeconomic Resources
Short-term = Less than one year, normally during construction and recovery. ***Long-term*** = Longer than one year, normally from operations. ***Cumulative impact*** = Incremental impact of an action added to past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Can result from individually minor but collectively significant actions taking place over a period of time.					
Negligible	Impact localized and not detectable, or at lowest levels of detection	Change in a population or individuals of a species; consequences to population not measurable or perceptible, or other changes not measurable or perceptible	Impact barely perceptible and not measurable; confined to small areas or affecting a single contributing element of a larger national register district with low data potential	Impact barely detectable, not in primary resource areas or would affect few visitors	Impact not detectable, no discernible effect on socioeconomic environment
Minor	Impact localized and slightly detectable but would not affect overall structure of any natural community	Change in a population or individuals of a species, if measurable, would be small and localized, or other changes would be slight but detectable	Impact perceptible and measurable, but would remain localized; affecting a single contributing element of a larger national register district with low to moderate data potential, or would not affect character-defining features of a national register eligible or listed property	Impact slight but detectable, not in primary resource areas or would affect few visitorS	Impact slightly detectable but would not affect overall socioeconomic environment
Moderate	Impact clearly detectable; could affect individual species, communities, or natural processes appreciably	Change in a population or individuals of a species measurable but localized	Impact sufficient to change a character-defining feature but would not diminish resource's integrity enough to jeopardize its national register eligibility, or it generally would involve a single or small group of contributing elements with moderate to high data potential	Impact readily apparent, in primary resource areas or would affect many visitors	Impact clearly detectable and could have an appreciable effect on the socioeconomic environment
Major	Impact highly noticeable and would substantially influence natural resources, e.g. individuals or groups of species, communities, or natural processes	Change in a population or individuals of a species measurable and would result in permanent consequence to the population	Substantial, highly noticeable change in character-defining features would diminish resource's integrity so much that it would no longer be eligible for national register listing, or it would involve a large group of contributing elements or individually significant properties with exceptional data potential	Effect severely adverse or exceptionally beneficial, in primary resource areas, or would affect most of visitors	Impact would have a substantial, highly noticeable, potentially permanent influence on socioeconomic environment

EFFECTS OF ALTERNATIVE 1 (NO ACTION)

NATURAL RESOURCES

Soils

Alternative 1 would not result in any soil disturbance except that caused by ongoing maintenance such as road grading and revegetation. All the areas that would be affected have been previously disturbed. Sites with soil disturbance would undergo accelerated erosion, at least temporarily, until drainage structures were fully operational and vegetation had recovered in cleared areas.

Maintenance activity would be restricted to the minimum area required for rehabilitation. To conserve available organic matter, topsoil would be retained and replaced where possible. To minimize the soil erosion created by foot traffic, most visitor developments have been constructed where the slopes are less than 15%. Where heavy foot traffic was expected, trails have been paved , and visitors are encouraged to stay on maintained trails. Trail rehabilitation would include special design methods in areas where the slope is high and soils are easily eroded. Because a relatively small area would be affected and mitigative measures such as prompt revegetation and silt fences would be employed, these adverse impacts would be minor and short term.

The soil survey for Crook County does not list soils in the monument as suitable for development. Most have a high erosion hazard, and some are susceptible to landslide. Under the no-action alternative, 36 acres of the 1,347 in the monument would continue to be occupied by development (less than 3%). Development has wholly or partially eliminated the direct inflow of water and diverted precipitation from natural drainages. Foot traffic would continue to compact soils, decrease permeability, alter soil moisture, and diminish water storage capacity, increasing erosion. Prolonged trampling would decrease vegetation and expose the soil to the erosive effects of rainfall. Runoff not collected and diverted to natural drainages would overflow on adjacent areas, increasing the local soil moisture regime. Increased runoff in these areas would result in localized increases in erosion, changes in soil nutrient transport and changes in the natural composition of vegetation. Altered vegetative composition would create changes in soil chemistry. These impacts have already occurred to some degree because all the areas involved have been disturbed; consequently, soil erosion, soil nutrient transport, and vegetation composition from hardened surfaces would be negligible, long-term adverse impacts.

Conclusion: Soil disturbance from ongoing maintenance would be restricted to the minimum required for rehabilitation. Short-term impacts on soil erosion would be minor and adverse. The adverse impacts on soils from ongoing visitor use (compaction, decreased permeability, decreased moisture, erosion) would be long-term and negligible.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Vegetation

Alternative 1 would not result in any disturbance of vegetation except that caused by ongoing maintenance such as road grading and revegetation. Because most of these maintenance activities would occur over small areas that have been previously disturbed, this would be a negligible long-term adverse impact.

Clearing some vegetation during maintenance could increase the relative abundance of plant species that invade disturbed areas. Increased

erosion at these areas could expose root systems, subsequently leading to the death of more mesic plants (those needing a moderate amount of water).

The preservation of a remnant of a prairie remnant in the northwest corner of the monument would continue. This would be a minor beneficial long-term effect on the prairie remnant.

Conclusion: Maintenance and ongoing visitor use would affect vegetation by leading to changes in the relative abundance of species, the death of some plants from the exposure of root systems, the trampling and death of some plants, and the resultant changes in species composition. These would be negligible to minor long-term adverse effects.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wildlife

There would be no change in the amount of wildlife habitat in the monument under alternative 1. Development would continue to occupy 36 acres.

Wildlife habitat would continue to be fragmented by roads, trails, and facilities. Wildlife habits and movement would continue to be altered by employees and visitors. People still would concentrate at the base of the Tower, at the picnic, campground, trailer dropoff, and amphitheater, and in the administrative area. This would disturb wildlife and degrade habitat. These intermittent adverse impacts would be minor and long term.

Visitors using the northwest area or the special permit camping area a few times a year would continue to cause an intermittent minor disruption of wildlife. This intermittent adverse impact would be negligible and long term.

Vehicle traffic would still proceed at low speeds so that the incidence of collisions with wildlife would continue to be relatively low.

Conclusion: Overall, the interruption of wildlife habitat, the alteration of wildlife movement, and vehicular collisions with wildlife from this alternative would be a long-term minor adverse impact.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Air Quality

Air quality at the entrance station is degraded during peak visitation periods when visitor vehicles must wait in line. Air quality degradation also occurs at the base of the Tower when visitor vehicles circle the parking area repeatedly, searching for a place to park. These situations would continue under alternative 1. Tour buses idling while parked also degrade the air quality. Continuing this situation would result in a long-term moderate adverse impact during peak times. Because visitors would notice the air degradation, the effect would be moderate and adverse, occurring from approximately 9 A.M. until 7 P.M. from Memorial Day through the third week in September.

Visitor vehicles would continue to degrade the air quality at the picnic, campground, trailer dropoff, and amphitheater areas. This impact

would be minor because it would be localized and intermittent, as vehicles would come and go. The effect would be long term, occurring primarily from 9 A.M. to 7 P.M. from Memorial Day through the third week in September.

When the special permit camping area was in use, the air quality would continue to be degraded by some group activities and campfires. This infrequent adverse effect would last only for several days about three times a year.

Visitor vehicles and employee activities, including maintenance, would continue to degrade the air quality at the administrative area. This negligible to minor impact would continue to occur sporadically throughout the year.

Conclusion: The adverse impacts on air quality and natural sound generally would be minor and long term.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Threatened, Endangered, and Candidate Species

Many natural resource experts consider prairie dogs a keystone species in the grassland ecosystem. Their presence indicates how healthy that ecosystem is. However, ranchers often view them as pests. The closeness of the picnic, campground, trailer dropoff, and amphitheater might limit the expansion of the prairie dog town. It is not known whether the visitor use area would be intermittently or perennially suitable habitat for prairie dogs. A high water table might make that area unsuitable in wet years. At present, prairie dogs moving into the visitor use area are moved out again because of concerns about visitor safety (bites). This would be a long-term minor adverse impact on the prairie dog town at Devils Tower. It is especially important to retain the population in the monument because this is the only prairie dog town within 7 miles.

At the prairie dog town, the habituation of wildlife to unnatural foods would continue. The monument staff would continue to try to reduce the feeding of human food to prairie dogs by educating visitors. This would be a long-term minor beneficial effect on prairie dogs.

Conclusion: Overall, limiting the size of the prairie dog town by preventing it from spreading into other suitable habitat in the monument would be a minor long-term adverse impact on prairie dogs. The beneficial effect of retaining the prairie dog town in the monument would be partially offset by the negative regional effect of preventing the prairie dog colony from expanding.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wetlands

In the no-action alternative the administrative building and nearest residence would continue to occupy a wetland area. Maintaining the monument road also would continue to modify a wetland area. Thus, the natural functioning of these wetlands would continue to be compromised. Because the area involved would be less than 1 acre, this continuing adverse impact on wetlands would be long term and minor.

The wetland on the first river terrace near the special permit campground might be trampled by campers trying to reach the river. However, since such special permit camping takes place only once or twice a year, this continuing adverse impact on wetlands would be negligible, intermittent, and long-term.

Conclusion: Maintaining the administration building and employee residence in wetlands and diverting runoff away from these wetlands would continue a minor long-term adverse effect on wetlands. Trampling of a wetland near the special permit campground would be a negligible long-term adverse impact that might occur up to twice a year.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Floodplains

Natural and Beneficial Floodplain Values. The natural and beneficial values of floodplains would continue to be compromised by the presence of the 50-site campground. This continuing adverse impact on natural processes would be major and long term.

Flooding. Under the no-action alternative the 50-site campground would continue to occupy part of the 100-year floodplain. If a 100-year flood occurred on the Belle Fourche River, water in the campground would be 2 to 4 feet deep and of moderate velocity. In the past 40 years, two flood events from spring runoff and heavy rain covered the campground with 5 feet of water. Such an occurrence could be caused by heavy rain when the dam is already full or by flooding on one or more tributaries of the Belle Fourche. A breach of the Keyhole Dam would potentially cause a level of flooding that would endanger campers. These conditions would be hazardous to campground occupants; however, there is a convenient escape route to higher ground toward the northwest, and an evacuation plan would be developed in accordance with NPS policy.

The *Crook County Emergency Plan* indicates that, "In the event of a dam breach at Keyhole, it will be approximately 3 hours before floodwaters reach Devils Tower National Monument." However, even though an evacuation plan would be prepared and potential warning from operators of the Keyhole Dam would reduce the risk to campers, some danger to these visitors would remain. Communications might not always be fully comprehended or acted upon. Miscommunications could leave campers at risk in the event of a 100-year flood or breach of the Keyhole Dam. Severe flooding has been infrequent, and the risks are minor to moderate, but the results of flooding could cause major adverse impacts on the visitors involved.

Conclusion: The natural and beneficial values of floodplain areas would continue to be compromised by the presence of the 50-site campground. This continuing long-term adverse effect on natural processes would be major. Although severe flooding has been infrequent and the risks are minor to moderate, flooding could result in major adverse impacts on the visitors involved.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Agriculture (including dryland farming) and ranching have greatly

reduced native prairie plants and animals and led to the alteration and erosion of soils. Wildlife have been affected by being displaced, and habitat has been lost through agricultural uses, animals, and plants. Probably the greatest impact on wildlife at the monument has been the restriction of movement caused by fencing much of the perimeter along the south and west boundaries. Wildlife are also disrupted by development, employees, and visitors.

If the repaving and widening of the road, as described in the cumulative effect scenario, was approved, approximately 0.68 acre of previously disturbed herbaceous vegetation along the road would be lost. Placing riprap in several locations to reduce the erosion of drainage ditches would result in the loss of 0.01 acre of grassland. Removing and revegetating at least four existing pullouts would result in the establishment of approximately 0.2 acre of additional grassland habitat dominated by native grasses and wildflowers. Small mammals would be displaced and native vegetation would be removed by these actions.

The development of some private or state lands for tourist-related activities or for residential or other uses could increase runoff and soil compaction and could alter soil regimes and vegetative communities, as well as causing the loss of plants in some areas. Increased development outside the monument would further fragment wildlife habitat and interrupt wildlife habits and movement. Less land would be available for prairie dog habitation. Road kills of rodents, larger mammals, and birds would increase because more development probably would increase traffic. If visitation increased, bringing more traffic, the air quality would be degraded further

"The black-tailed prairie dog has undergone severe reduction in occupied range and population in Wyoming since settlement and the advent of farming and ranching. Occupied range has been reduced by over 80% from pre-settlement" (Campbell and Clark 1981). "Similar to other parts of the historical range, the major reduction in prairie dog populations probably occurred in the early 1900s when poisoning programs began in earnest"(AZ Game and Fish Dept. 1999).

The implementation of a "Memorandum of Understanding among State Fish and Wildlife Agencies within Black-tailed Prairie Dog Range: Conservation and Management of Black-tailed Prairie Dog in North America" (9 of 11 states) might lead to the development and implementation of comprehensive state plans. These plans would be designed to maintain the broadest distribution and greatest abundance possible within the fiscal realities of the state agencies and cooperating partners.

Cooperative partnerships might be developed with interested individuals and private, state, tribal, and federal land managers. However, implementing such plans would take several years. For the time being, it is not expected that landowners outside the monument would allow prairie dogs to move onto their land. Therefore, the prairie dog colony at Devils Tower would be unlikely to grow large enough to support ferrets and mountain plover. The population in the monument probably would continue to be small and isolated.

As part of road repaving, wooden posts would be replaced along the road and at pullouts adjacent to the prairie dog colony. This could temporarily displace individual animals but would not be not likely to result in mortality. In areas occupied by prairie dogs, the centerline of WY 110 would be shifted north to avoid impacts on numerous burrows adjacent to the southern edge of the road (NPS 2000a.)

The construction of the Keyhole Dam has greatly reduced the extent of the floodplain, associated wetlands, and the natural and beneficial values of floodplains and wetlands. At least some wetlands in the area probably have been filled to make more land available for growing crops. Cattle and sheep probably have been allowed to use some wetland and riparian areas in the vicinity of the monument. These practices decrease the wetland areas and degrade natural and beneficial floodplain values in ex-

change for benefits to agricultural uses. NPS structures and visitor uses in wetland and floodplain areas contribute to the loss of natural and beneficial values. This alternative would not involve removing activities and structures from floodplains and wetlands or restoring natural and beneficial values inside or outside the monument. The presence of the dam would result in major long-term reductions in area and in beneficial values in floodplains and wetlands downstream of the dam on the Belle Fourche River. Repaving the main monument road would not result in any impact on any floodplain or wetland.

Further developments in floodplains and wetlands for residential, agricultural, or commercial uses would decrease the area in which natural and beneficial wetland and floodplain values would be preserved.

Overall, the above past, present, and future actions, in conjunction with the impacts of alternative 1, would result in major long-term adverse impacts on natural resources, including soils, vegetation, wildlife, prairie dogs, wetlands, and floodplains. Most of the impacts would result from previous actions, including agriculture, ranching, and dam construction. The actions of alternative 1 would contribute a very small increment to the overall cumulative impact.

CULTURAL RESOURCES

Ethnographic Resources

Ethnographic resources sacred to tribes, including the viewshed, would continue to be degraded by high visitor congestion and vehicular traffic at the base of the Tower, at the entrance station, and at the picnic area, the campground and special permit camping area, and the administrative area. The congestion and traffic are readily apparent. The Tower has been found eligible for listing on the National Register of Historic Places as a traditional cultural property, and it also is a center of religious ceremony, a sacred place, and a place of healing. The Tower is critical to the tribal existence of a people. Therefore, the adverse impacts on ethnographic resources that would occur during the peak use season each year under alternative 1 would continue to be major and long term.

American Indians wanting privacy for religious activities would continue to be disrupted occasionally by such things as the presence of other visitors or traffic congestion. These conflicts, which would be slight but detectable, would constitute a minor recurring short-term adverse impact.

Continuing the existing requirement for large groups of campers to obtain a permit would have a negligible long-term adverse effect on ethnographic resources.

Conclusion: Ongoing major long-term adverse impacts on ethnographic resources at the Tower, the entrance station, and other visitor use and administrative areas would continue under alternative 1.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Although past actions have affected ethnographic resources, no ongoing or future actions such as the repaving of the main monument road would have a perceptible impact on them. Actions in alternative 1 would not add appreciably to the cumulative impacts.

Historic Resources

Historic fabric could be lost or new visual and nonhistoric elements could be introduced through actions taken to make historic buildings

and structures accessible to people with impaired mobility to comply with the Architectural Barriers Act of 1968 and the Rehabilitation Act of 1973. The monument would develop design solutions using the *Secretary of the Interior's Standards* to meet accessibility requirements while minimizing impacts on cultural resources. When specific proposals were evaluated, impacts would be assessed. Any actions then would have no more than a minor effect on historic buildings and structures.

Visitor activity and traffic congestion would continue in the historic district at the base of the Tower and the viewshed from the Tower. The buildings were intended to facilitate visitor use of the area, but the degree of congestion has increased so much over the years that there is a minor adverse impact on the historic setting during peak times each year, and this impact would continue under alternative 1.

The historic road and historic entrance station would continue to be intruded upon by non-historic buildings such as the kiosk and the administrative area. This slight but detectable continuing adverse impact would be minor and long term.

Some maintenance activities would result in visual and auditory intrusions; however, such intermittent adverse impacts would be short term and minor.

Conclusion: Long-term minor adverse impacts from visitor and traffic congestion in the historic district and from the modification of buildings for accessibility would continue.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: The number and integrity of CCC-made roadway features (such as rock walls and culvert headwalls) would continue to be gradually reduced by traffic, erosion, natural processes, and highway construction. With continuing aging of these 1930s structures, there is the potential for accelerated deterioration from natural causes, which could result in the loss of structural integrity and original materials.

Repaving the main monument road would not affect the historic buildings. Burying the culvert headwall would have a minor long-term adverse effect on one roadway contributing feature. A moderate long-term beneficial effect would result from rehabilitating the roadway. Long-term moderate adverse cumulative effects would result from traffic, natural processes, and new construction, which would damage or destroy CCC roadway structures.

Overall, the above past, present, and future actions, in conjunction with the actions of this alternative, would result in long-term minor to moderate adverse impacts on historic resources. Most of these impacts would have been caused by past actions and processes, including traffic, erosion, natural processes, and highway construction. The actions of this alternative would contribute a very small increment to the overall cumulative effect.

Section 106 Summary: This summary was prepared with the use of the definitions of section 106 of the National Historic Preservation Act.

Under the regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) addressing the criteria of effect and adverse effect, the National Park Service finds that continuing management policies under this alternative (visitor and vehicular congestion at the base of the Tower and in other areas) would result in continued adverse effects on ethnographic resources.

The effect on ethnographic resources from the continued requirement that permits be obtained

for the use of the northwest and special permit camping area would not be adverse.

The continued degradation of the setting of the historic district would not constitute an adverse effect (see "Cultural Resources" under "Methodology for Analyzing Impacts," above).

VISITOR EXPERIENCE

Visitors' Experience of Monument Resources

Under this alternative, visitors' experience of the Tower area would continue to be degraded by noise, vehicle smells, and the frustration of not finding parking places. The continuation of these existing conditions would be a long-term major adverse impact on visitors during peak use times. The impact would be major because most visitors would be affected and because the Tower area is a primary resource area. Fewer visitors would be affected in non-peak times, so at those times the impact would be moderate.

Monument visitors can stop at three vehicle pullouts along the road near the prairie dog town, get out of their cars, and watch prairie dogs up close. They can walk along short trails, and some simply wander around the prairie dog town. This opportunity for close interaction with wildlife is considered an important element of most visitors' experience; therefore, continuing this opportunity would result in a continued major beneficial effect for most visitors.

Although only a small number of visitors use it, the campground offers a pleasant, shady, peaceful camping experience that its users value highly. Visitors also enjoy the picnic area, as do local residents on family outings. Although these two facilities are important to some visitors, the visitor experiences they offer are not fundamental to the monument's significance. Nevertheless, public input has indicated that these assets would continue to have a long-term moderate beneficial effect for visitors.

The location of the monument's administrative headquarters along the main road between the entrance and the Tower area would continue a minor inconvenience to a small number of visitors. For all visitors, the headquarters building would continue to be a long-term minor visual intrusion on the historic and natural scenic corridor of the road.

Parked vehicles, lights at night, and developments associated with the campground, picnic area, trailer dropoff, and administrative headquarters are visible from the Tower area and from the trails. These visual intrusions degrade the natural setting. However, under existing conditions, these long-term adverse visual impacts would be minor because the developments are low-key and screened somewhat by vegetation. Nevertheless, lights at night would continue to disrupt the view for small numbers of visitors who might be at or on the Tower at night.

The best opportunities for quiet and a natural experience are in the northwest corner of the monument. Views of the Tower are outstanding, and the viewshed is virtually pristine. Although this area is not heavily visited, these kinds of experiences are important to the visitors who go there. Responses to visitor surveys have indicated a high interest in quiet, natural scenery, and getting away from life's pressures. Continuing to have these opportunities available would result in a long-term major benefit for visitors seeking these kinds of experiences.

Although the large group permit camping area is not heavily or frequently used and not fundamental to the monument's mission, this area offers expanded opportunities for group recreation. However, it also results in a minor impact on the viewshed from the Tower and the trails. Continuing the availability of permit camping in this area would result in a long-term minor benefit for the few visitors served.

Access and Freedom to Go at One's Own Pace

Under current conditions, visitors are free to come and go within the monument at their own pace, depending on the availability of parking.

This freedom of movement is perceived as a long-term major beneficial effect by visitors to whom such spontaneity is an important value. During peak use times, this benefit is reduced to a moderate level by the constraints of traffic and parking congestion.

Access to the Tower trail is congested at peak times, and the steep trail approach is difficult or impossible for some visitors to negotiate. The inaccessibility of the approach to the Tower trail would continue to have a major long-term adverse effect on visitors who would be excluded from a close experience of the monument's primary resource.

Traffic congestion on the main road through the prairie dog town would cause frustration for visitors who wanted to go on to the Tower. This would be a minor adverse impact on most visitors during periods of low visitation. However, during peak use times, the impact would be moderate, particularly if a visitor's time in the monument was limited.

Continuing the requirement that towed vehicles be dropped off at the mowed area along the campground access road before proceeding to the Tower area would continue to result in inconvenience for those visitors under existing conditions. This would be a minor impact because of the small number of visitors affected; however, moderate adverse impacts would result during peak visitation.

When waiting lines at the entrance station are up to 0.5 mile long at peak use times, visitors may be frustrated. On a few days a year the lines may up be up to 1.5 miles long. In this alternative, delays at the entrance station would continue to be a negligible to minor adverse impact on most visitors, but the frustration could continue to have a moderate effect on visitors at peak use times, particularly for those on a tight schedule.

Access to Orientation and Interpretation

Facility limitations and crowded conditions at the Tower area and visitor center would continue to lead to visitor frustration over being unable to get the important orientation and interpretation that they would like to have. Almost all visitors would be affected, and because of the high value they place on interpretation, continuing the current limitations on interpretive opportunities would constitute a long-term moderate to major adverse impact.

Visitor Safety

Some vehicle accidents in the Tower area could result from traffic congestion and the need to manipulate large vehicles in a small space. The parking pullouts and pedestrian activity at the prairie dog town also could result in some traffic congestion, threatening vehicle and pedestrian safety. Vehicle accidents have been infrequent in the monument, and risks are considered minor to moderate, but the results of an accident could be a major adverse impact on the visitors involved.

Cumulative Effects: Although past actions have affected visitor experience, no ongoing or future actions such as the repaving of the main monument road would have a perceptible impact on it. The actions of this alternative would not add appreciably to cumulative effects.

Conclusion: Alternative 1 would result in continuing degradation of the prime monument resource by noise, vehicle smells, and visitor frustration at not finding parking places. Continuing these existing conditions would result in a long-term major adverse impact on visitors coming at peak use times. The inaccessibility of the approach to the Tower trail would continue to exclude some visitors from a close experience with the Tower, a major, long-term adverse impact for those visitors. Overall, because of the facility limitations and crowded conditions at the Tower area and the visitor center, visitors would continue to be frustrated by the inability to receive orientation and interpretation.

Visitors would be free to come and go around the monument at their own pace, depending on the availability of parking. This freedom of

movement would be a long-term major benefit for visitors to whom such spontaneity is an important value.

The campground offers a pleasant, shady, peaceful camping experience that its users value highly. Public input indicates that retaining the campground would constitute a moderate long-term beneficial effect for visitors.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

SOCIOECONOMIC RESOURCES

Businesses and Neighbors

The entrance station would remain in its current location in the middle of the entrance road under alternative 1, at the point where the monument abuts the Devils Tower Trading Post and the KOA General Store. With the entrance station in this location, the Trading Post and KOA have a distinct competitive advantage over commercial outlets farther from the entrance. This would be a moderate long-term beneficial effect on the nearby businesses. A transportation study prepared by Robert Peccia & Associates (October 1999) indicates that 34% of the vehicles entering Devils Tower National Monument first enter the retail area immediately outside the entrance. The same study reports that 41% of vehicles leaving the monument enter the retail area immediately outside the entrance. However, Anecdotal reports from these businesses indicate that monument visitors are discouraged from entering the business establishments during peak visitation times because there can be a the line of traffic blocking the entrances.

Without data on how many vehicles contain visitors who want to stop at the retail area, and assuming that the same vehicles are not stopping upon entrance and exit, it appears that about 75% of vehicles manage to stop at the retail area. Assuming that all the vehicles that do not stop do not do so because the visitors in them do not want to stop, this is a negligible short-term adverse impact that occurs during peak use periods. Assuming that all 25% of vehicles that do not stop contain visitors who want to stop but cannot do so because of the traffic, this adverse impact would be minor, intermittent, and long term, occurring at peak times. Consequently, the loss of revenue to these businesses from the traffic congestion during peak use periods would vary from negligible to moderate, depending on visitor preference.

The monument would continue to make available tent and RV campsites. To the extent that visitors chose to stay in the NPS campground, that business would be lost to competing private and public campgrounds. The NPS campground is relatively small; therefore, this would be a continuing negligible long-term adverse impact on competing campgrounds.

The owners of property adjacent to the monument who use the entrance road for access to and egress from their properties might continue to experience minor inconvenience due to visitor traffic at the entrance station during peak use periods. This would be a long-term adverse impact that would not affect the property owners' quality of life because there are alternative accesses, and the impact would occur only during peak use periods.

The traffic flow through the northwest corner of the monument would not change under this alternative, and there would be no change in access for owners of adjacent property who currently have unrestricted access to their properties through this part of the monument.

Conclusion: The Devils Tower Trading Post and the KOA General Store have a competitive advantage over commercial outlets farther from the monument entrance. This is a

moderate beneficial long-term effect for those businesses.

Owners of property adjacent to the monument who use the entrance road to come and go from their properties might experience minor inconvenience from visitor traffic at the entrance station during peak times.

Local and Regional Economy

Devils Tower National Monument employs 10 permanent employees and as many as 18 seasonal employees. The affiliated natural history association has one permanent and up to 5 seasonal employees. The total employment in Crook County in 1997 was 3,302. Therefore, the effect of employment at the monument on the county economy is negligible, long-term, and beneficial.

The monument's operating budget for 2001 is $753,000. Total industry earnings in Crook County in 1997 were $62.2 million. Therefore, the impact of the monument on the Crook County economy is negligible, long term, and beneficial.

Conclusion: Because employment and expenditures of the monument are very small compared to the county economy as a whole, the impacts of monument employment and expenditures are negligible, long term, and beneficial.

Cumulative Effects: Although past actions have affected socioeconomic resources, no ongoing or future actions such as the repaving of the main road would have a perceptible socioeconomic impact. The actions of alternative 1, together with those in the cumulative effect scenario, would not add appreciably to cumulative effects.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts that would result from alternative 1. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are described in the foregoing analysis.

Natural Resources

Wildlife habitat would continue to be interrupted, and wildlife habits and movement would be altered by the presence of development, employees, visitors, and fences along the monument boundary. Long-term adverse impacts on wildlife would continue to be negligible to moderate.

The natural and beneficial values of floodplain areas would continue to be compromised by the presence of the 50-site campground. This continuing long-term adverse impact on natural processes would be major. Although severe flooding has been infrequent and risks are minor to moderate, flooding could result in major adverse impacts on the visitors involved.

Cultural Resources

Ethnographic resources sacred to tribes, including the viewshed, are degraded by high visitor congestion and vehicular traffic at the base of the Tower, the entrance station, the picnic and campground areas, the administrative area, and the special permit camping area. The congestion and traffic are readily apparent. The Tower has been found eligible for listing on the National Register of Historic Places as a traditional cultural property. It is also a center of religious ceremony, a sacred place, and a place of healing, and it is critical to tribal existence as a people. Therefore, a major long-term adverse impact on ethnographic resources would continue during the peak use season each year.

American Indians wanting privacy for religious activities would continue to be disrupted occasionally by such things as the presence of other visitors or traffic congestion. These conflicts, which would be slight but detectable, would constitute a minor recurring short-term adverse impact. If visitor intrusions caused tribes to

change their religious activities, the adverse impact would become major and long term.

Visitor Experience

Visitors' experience of the Tower area would continue to be degraded by noise, vehicle smells, and the frustration of not finding parking places. Continuing these existing conditions would be a long-term major adverse impact on visitors at peak use times. The impact would be major because most visitors would be affected and because the Tower area is a primary resource area. Fewer visitors would be affected in non-peak times, so at those times the impact would be moderate

Access to the Tower trail is congested during peak times, and the steep trail approach is difficult or impossible for some visitors to negotiate. The inaccessibility of the approach to the Tower trail would continue to have a major long-term adverse effect on visitors who would be excluded from a close experience of the monument's primary resource.

Traffic congestion on the main road through the prairie dog town would cause frustration for visitors who wanted to go on to the Tower. During peak use times, the impact would be moderate, particularly if a visitor had limited time to spend in the monument.

Continuing the requirement that towed vehicles be dropped off at the mowed area along the campground access road before proceeding to the Tower area would continue to result in an inconvenience for those visitors under existing conditions. This would result in a moderate adverse impact on those visitors during peak visitation.

When waiting lines at the entrance station became up to 0.5 mile long at peak use times, some visitors might be frustrated On a few days a year, the lines might reach 1.5 miles long Delays at the entrance station would continue to have a moderate long term effect on visitors during peak use times, and the frustration could continue, particularly for those on a tight schedule.

Facility limitations and crowded conditions at the Tower area and visitor center would continue to lead to visitor frustration over being unable to get the important orientation and interpretation that they would like to have. Almost all visitors would be affected, and because of the high value they place on interpretation, continuing the current limitations on interpretive opportunities would constitute a long-term moderate to major adverse impact.

Some vehicle accidents in the Tower area could result from traffic congestion and the need to manipulate large vehicles in a small space. The parking pullouts and pedestrian activity at the prairie dog town also could result in some traffic congestion, threatening vehicle and pedestrian safety. Vehicle accidents have been infrequent, and risks are considered minor to moderate, but an accident could result in a major long-term adverse impact on the people involved.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Severe flooding has been infrequent, and the risks are minor to moderate; however, flooding could result in major adverse impacts on the visitors involved. Any loss of life would be irreversible.

RELATIONSHIPS OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Continuing visitor activities would reduce the long-term productivity of the environment. Noise, artificial lighting, and human activities associated with ongoing visitor and administrative use of the monument would prevent wildlife populations, including prairie dogs, from reaching their full potential in size and population density. Visitation at peak times and associated congestion at the Tower would continue to diminish the area's long-term value for American Indian religious practices.

IMPAIRMENT

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents. Should ongoing adverse impacts on ethnographic resources at the Tower continue unchecked, this critical system might be impaired at some point in the future.

EFFECTS OF ALTERNATIVE 2

NATURAL RESOURCES

Soils

In the lower parking area at the base of the tower, some regrading and possible construction of retaining walls would be necessary under alternative 2 before the area was paved. A small part of the natural soil profile could be lost, a minor long-term adverse impact.

Several impacts would result from the alternative 2 actions of converting the upper parking area at the Tower to a pedestrian plaza, enlarging and paving the lower parking area, rehabilitating the west road and one track of Joyner Ridge trail, removing vehicle pulloffs from the prairie dog town, converting loop A of the campground to a trailer dropoff area and tour bus parking, and restoring vegetation in the special permit camping area. Approximately 4 acres of soils would be disturbed in the short term. All the areas that would be affected have been previously disturbed. Sites with soil disturbance would undergo accelerated erosion, at least temporarily, until drainage structures were fully operational and vegetation had recovered.

Construction activity would be restricted to the minimum area required for building or rehabilitating. Topsoil would be retained and replaced where possible to conserve available organic matter. Most visitor developments would be built on areas with slopes of less than 15% to minimize the soil erosion created by foot traffic. Trails where heavy foot traffic could be expected would be paved, and visitors would be encouraged to stay on maintained trails. Special designs would be used for trail construction in areas with high slope and easily eroded soils. The area that would be affected has been disturbed previously, and mitigating measures would be implemented; therefore, the adverse impacts on soils from increased erosion would be minor and short term.

The net increase in paved surfaces (including gravel) would be less than 0.5 acre. In areas with hardened surfaces, the direct inflow of water to soil would be partially or totally eliminated, and precipitation would be collected and diverted to natural drainages. Runoff not collected and diverted to natural drainages would pour out onto adjacent areas, increasing the local soil moisture regime. Increased runoff in these areas would result in localized increases in erosion, changes in soil nutrient transport, and changes in the natural composition of vegetation. Altered vegetative composition would create slight changes in soil chemistry. These impacts have already occurred to some degree because all the areas involved have already been disturbed. Because the area that would be impacted is very small and already disturbed, the impact would be minor. Increased erosion, soil nutrient transport, and vegetation composition from hardened surfaces would result in long-term adverse impacts on soils.

Conclusion: Potential regrading of the lower parking area could cause the loss of a small part of the natural soil profile, a minor adverse short-term impact. Disturbing about 4 acres of soil during construction would increase soil erosion, which would be a minor adverse short-term impact on soils. Increasing paved surfaces (including gravel) by less than 0.5 acre would increase erosion, soil nutrient transport, and vegetation composition, a minor long-term adverse impact. The overall adverse impacts on soils would be minor and long term.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Vegetation

Enlarging the overflow parking at the Tower, widening the trail in the prairie dog town, and converting campground loop A to accommodate trailer dropoff and tour bus parking would result in the loss of about 1.3 acres of already disturbed vegetation. Because the area is already disturbed and mitigating measures would be implemented (as described under "soils"), this long-term adverse impact would be minor.

Clearing some vegetation during construction could increase the relative abundance of plants that invade disturbed areas. Increased erosion at these areas could expose root systems and lead to the subsequent death of more mesic plants (those needing a moderate amount of water).

Every effort would be made to preserve the large cottonwood trees in the campground. Topsoil would be scraped off and set aside before construction began. To allow more rapid recovery of native vegetation and to minimize the encroachment of invading species, the soil would subsequently be replaced and reseeded with seeds of native species gathered in the monument or seeds gathered in the monument and propagated elsewhere. During the recovery period, the artificially seeded or replanted native vegetation would not be identical in composition to vegetation in adjacent areas. A reduction in the organic content of the soil would cause a slight change in species composition for several years. Because the affected area is already disturbed and the described mitigating measures would be taken, this adverse impact on previously disturbed vegetation would be minor and long term.

Some vegetation would be trampled or destroyed by the use of the northwest corner of the monument a few times a year. The permit system and associated management of visitor use under alternative 2 would reduce this impact by spreading the use over a larger area. This intermittent adverse impact would be negligible and long term.

The preservation of a prairie remnant in the northwest corner of the monument would be enhanced by closing the north road to all but administrative use and by obliterating and reseeding the west road and one track of Joyner Ridge trail with native species. This beneficial effect on the prairie remnant would be minor and long term.

Revegetating about 4 acres at the pedestrian plaza, the west road, the Joyner Ridge trail, and the prairie dog pullouts would result in a minor long-term beneficial effect on vegetation. The revegetation would benefit about three times the acreage than the amount that would be lost in this alternative(about 1.3 acres).

Conclusion: Although there would be a net gain of 2.6 acres of vegetation and improved preservation of vegetation in the northwest area, 1.3 acres of already-disturbed vegetation would be lost. This adverse effect would be minor and long term.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wildlife

Approximately 1.3 acres of wildlife habitat would be lost through enlarging the lower parking area at the Tower, widening the trail through the prairie dog town, and converting loop A of the campground to accommodate trailer dropoff and tour bus parking. Every effort would be made to avoid harm to the large cottonwood trees in the campground area, which provide habitat for wildlife. This adverse impact on already disturbed wildlife habitat would be minor and long term.

A long-term increase of about 3.9 acres of wildlife habitat would be brought about by closing and revegetating the west road, restoring one lane of the two-track Joyner Ridge trail, restoring the prairie dog town pulloffs, and restoring the special permit campground to natural conditions. Restoring the latter campground would have a very small effect, if any, because it is used so little; even so, there would be a minor long-term beneficial effect on wildlife habitat.

Invertebrates and small vertebrates can be destroyed by construction or displaced by changes in vegetation that result from construction. Small mammals and birds usually are displaced and disrupted by the development of an area. The areas that would be developed in alternative 2 are already disturbed, and it is possible that creating a pedestrian plaza, with its increased vegetation, might increase habitat for invertebrates, small vertebrates, mammals, and birds by about 0.5 acre. Paving the trailer dropoff area might decrease habitat for these animals by 0.4 acre. Thus, the adverse effect on invertebrates and small vertebrates would be negligible and short term.

Conclusion: Alternative 2 would result in a net increase in wildlife habitat of about 2.6 acres. Because of the relatively small area of impact and because care would be taken to avoid the large cottonwood trees in the campground area, the long-term beneficial effect on wildlife would be minor.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Air Quality

Admitting fewer visitors during peak times would improve air quality because fewer vehicles would be in the monument at any one time. The air quality also would be improved because circling the parking lot at the Tower to find a parking space would become unnecessary. This minor beneficial effect during peak times would be long term and intermittent.

Construction would cause only temporary localized impacts on air quality, such as dust and diesel fumes from heavy equipment. This negligible short-term effect would be adverse.

Conclusion: The overall effect of alternative 2 on air quality in the peak season would be minor and beneficial in the long term because of the potential reservation system.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Threatened, Endangered, and Candidate Species

Removing automobile pulloffs (0.2 acre) from the prairie dog town and restoring these areas to more natural conditions would reduce interactions between visitors and prairie dogs. It also would reduce stress on the prairie dogs, eliminate their chance of being run over in the pulloffs, and make it more difficult for visitors to feed them human food. Eliminating a place where humans interact with prairie dogs would result in a minor long-term beneficial effect on the prairie dogs.

Widening the trail around the prairie dog town and covering it with gravel would reduce the habitat slightly (by 0.3 acre) and could lead to stress on individual prairie dogs along the trail edge. This would be a minor long-term adverse impact on prairie dogs. However, the prairie dogs would benefit from the trail widening because it would discourage visitors from wandering off the trail. Because the trail is already in place and would only be widened, this long-term effect on prairie dogs would be negligible. A net loss of 0.1 acre in prairie dog habitat would be a minor long-term adverse impact.

Conclusion: Alternative 2 would result in an overall minor long-term adverse impact on black-tailed prairie dogs from a net loss of 0.1 acre of habitat.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wetlands

The only new effect on wetlands under alternative 2 would be caused by discontinuing the use of the special permit campground, which has been used only once or twice a year, with the possibility that campers might walk through the wetland on their way to the river. Removing this use might result in a negligible beneficial long-term effect on wetlands.

Conclusion: Removing the special permit campground might have a negligible beneficial long-term effect on wetlands.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Floodplains

Natural and Beneficial Floodplain Values. With the structures in floodplains left as at present and with campground loop A converted to accommodate trailer dropoff, bus parking, and trail access for prairie dog viewing and interpretation, the development footprint in the floodplain would remain the same. There probably would be a small net increase in paved area. Natural and beneficial floodplain values would continue to be compromised. This continuing long-term adverse impact on natural processes would be major.

Flooding. Reducing the potential overnight occupancy from 50 sites to 30 (in campground loop B, which would be unchanged) would mean that campers still would be subject to the potential hazard of a 100-year flood. If a 100-year flood occurred on the Belle Fourche River, water in the campground would be 2 to 4 feet deep and of moderate velocity. In the past 40 years, two flood events from spring runoff and heavy rain covered the campground with 5 feet of water. Such an occurrence could be caused by heavy rain when the dam is already full or by flooding on one or more tributaries of the Belle Fourche. A breach of the Keyhole Dam would potentially cause a level of flooding that would endanger campers. These conditions would be hazardous to campground occupants; however, there is a convenient escape route to higher ground toward the northwest, and an evacuation plan would be developed in accordance with NPS policy.

The *Crook County Emergency Plan* indicates that, "In the event of a dam breach at Keyhole, it will be approximately 3 hours before floodwa-

ters reach Devils Tower National Monument." However, even though an evacuation plan would be prepared and potential warning from operators of the Keyhole Dam would reduce the risk to campers, these visitors would remain in some danger. Communications might not always be fully comprehended or acted upon. Miscommunications could leave campers at risk in the event of a 100-year flood or breach of the Keyhole Dam. Severe flooding has been infrequent, and risks are minor to moderate, but flooding could result in major adverse impacts on the visitors involved.

A 100-year flood, as described in the "Affected Environment" chapter, would be hazardous to campground occupants. If Keyhole Dam failed, the expected 3-hour flood warning time would allow campers ample time to get themselves and their equipment out of the floodplain. Therefore, developing an evacuation plan for the campground would result in a negligible beneficial effect in the long term.

Conclusion: The natural and beneficial values of floodplain areas would continue to be compromised by the development within them. This continuing long-term adverse impact on natural processes would be major. Although severe flooding has been infrequent and risks are minor to moderate, flooding could result in major adverse impacts on the visitors involved.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Agriculture (including dryland farming) and ranching uses have greatly reduced native prairie plants and animals and led to the alteration and erosion of soils. Wildlife have been affected by being displaced, and habitat has been lost through agricultural uses, animals, and plants. Probably the greatest impact on wildlife at the monument has been the restriction of movement caused by fencing much of the perimeter along the south, east and west boundaries. Wildlife are also disrupted by development, employees, and visitors.

If the repaving and widening of the road, as described in the cumulative impact scenario, was approved, approximately 0.68 acre of previously disturbed herbaceous vegetation along the road would be lost. Placing riprap in several locations to reduce the erosion of drainage ditches would result in the loss of 0.01 acre of grassland. Removing and revegetating at least four existing pullouts would result in the establishment of approximately 0.2 acre of additional grassland habitat dominated by native grasses and wildflowers. Small mammals would be displaced and native vegetation would be removed by these actions.

The development of some private or state lands for tourist-related activities or for residential or other uses could increase runoff and soil compaction and alter soil regimes and vegetative communities, as well as causing the loss of plants in some areas. Increased development outside the monument would further fragment wildlife habitat and interrupt wildlife habits and movement. Less land would be available for prairie dog habitation. Road kills of rodents, larger mammals, and birds would increase because more development probably would increase traffic. If visitation (and traffic) increased, the air quality would be degraded further.

"The black-tailed prairie dog has undergone severe reduction in occupied range and population in Wyoming since settlement and the advent of farming and ranching. Occupied range has been reduced by over 80% from pre-settlement" (Campbell and Clark 1981). "Similar to other parts of the historical range, the major reduction in prairie dog populations probably occurred in the early 1900s when poisoning programs began in earnest"(AZ Game and Fish Dept. 1999).

The implementation of the "Memorandum of Understanding among State Fish and Wildlife Agencies within Black-tailed Prairie Dog Range: Conservation and Management of Black-tailed Prairie Dog in North America" (9 of 11 states) might lead to the development and implementation of comprehensive state plans. These plans would be designed to maintain the broadest distribution and greatest abundance possible within the fiscal realities of the state agencies and cooperating partners.

Cooperative partnerships might be developed with interested individuals and with private, state, tribal, and federal land managers. However, implementing such plans would take several years. For the time being, it is not expected that landowners outside the monument would allow prairie dogs to move onto their land. Therefore, the prairie dog colony at Devils Tower would be unlikely to grow large enough to support ferrets and mountain plover. The population in the monument probably would continue to be small and isolated.

As part of road repaving, wooden posts would be replaced along the road and at pullouts adjacent to the prairie dog colony. This could temporarily displace individual animals but would not be likely to result in mortality. In areas occupied by prairie dogs, the centerline of WY 110 would be shifted north to avoid impacts on numerous burrows adjacent to the southern edge of the road (NPS 2000a).

The construction of the Keyhole Dam has greatly reduced the extent of the floodplain, associated wetlands, and the natural and beneficial values of floodplains and wetlands. At least some wetlands in the area probably have been filled to make more land available for growing crops. Cattle and sheep probably have been allowed to use some wetland and riparian areas in the vicinity of the monument. These practices decrease the area of wetlands and degrade natural and beneficial floodplain values in exchange for benefits to agricultural uses.

NPS structures and visitor uses in wetland and floodplain areas contribute to the loss of natural and beneficial values. This alternative would not involve removing activities and structures from floodplains and wetlands or restoring natural and beneficial values inside or outside the monument. The presence of the dam would result in major long-term reductions in area and in beneficial values in floodplains and wetlands downstream of the dam on the Belle Fourche River. Repaving the main monument road would not result in any effect on any floodplain, wetland, or other water resources.

Further developments in floodplains and wetlands for residential, agricultural, or commercial uses would decrease the area in which natural and beneficial wetland and floodplain values would be preserved.

Overall, the above past, present, and future actions, in conjunction with the impacts of this alternative, would result in major long-term adverse impacts on natural resources, including soils, vegetation, wildlife, prairie dogs, wetlands, and floodplains. Most of the impacts would result from previous actions, including agriculture, ranching, and dam construction. The actions of alternative 2 would contribute a very small increment to the overall cumulative impact.

CULTURAL RESOURCES

Ethnographic Resources

Removing the paved upper parking area at the Tower to create a pedestrian plaza, removing the prairie dog town pullouts, and rehabilitating trails and disturbed areas would improve the viewshed in the Tower area, leaving fewer traffic-related visual intrusions on culturally sensitive areas. These actions would improve the ethnographic context of the area and would be favorable to American Indian tribes. Reducing the carrying capacity of the monument would decrease visitation and crowding, thereby providing more opportunities for solitude and quiet for traditional uses. This long-term beneficial effect on ethnographic resources would be moderate.

Reducing the concentrations of people and returning areas in the special permit zone (northwest corner of the monument) to natural conditions would give more protection to culturally sensitive areas and increase the opportunities for solitude in a larger area than in alternative 1. This beneficial effect on traditional cultural practices would be negligible and long term.

Continuing the present practice of requiring large groups to obtain a permit and requiring groups of six or more to register with a ranger would have a negligible long-term adverse effect on ethnographic resources.

Removing and rehabilitating the west road and closing the north road to visitors would reduce visual and auditory intrusions in this culturally sensitive area. This readily apparent change would be a moderate beneficial long-term effect. Removing the west road and closing the north road to visitors would not impede access to traditional areas because access would continue to be available via the main road. This negligible adverse impact would be long term.

Upgrading and formalizing the lower parking area at the Tower would move the intrusion on the ethnographically sensitive area at the Tower farther away. This long-term beneficial effect would be moderate.

Returning the special permit camping area to natural conditions could inconvenience up to two parties of American Indians per year. No one has used the campground since 1999. This would be a minor long-term adverse impact on American Indians who might wanted to camp there.

Visual and auditory intrusions would occur in the vicinity of all construction and rehabilitation activities. This minor adverse impact would be short term.

Conclusion: The impacts on ethnographic resources would be mixed. Removing the paved upper parking area at the Tower and creating a pedestrian plaza would be a moderate long-term benefit, as would removing the prairie dog town pullouts, rehabilitating trails and disturbed areas, and reducing the concentrations of people in the special permit zone. Removing and rehabilitating the west road and closing the north road to visitors also would result in moderate long-term beneficial effects.

Requiring groups of six or more to register with a ranger would result in negligible long-term adverse impacts, as would removing a little-used road and closing another to visitor use; however, these actions would not impede access to traditional areas. There would be minor long-term adverse impacts from returning the special permit campground to natural conditions and a short-term minor adverse impact from construction and rehabilitation.

On balance, the long-term effects on ethnographic resources from alternative 2 would be moderate and beneficial.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Although past actions have affected ethnographic resources, no ongoing or future actions such as the repaving of the main road would have a perceptible impact on them. The actions of alternative 2 would not add appreciably to the cumulative impacts.

Historic Resources

Removing the paved upper parking lot at the base of the Tower and establishing a pedestrian plaza would partially restore the setting of the historic district (which is listed on the national register) and improve its integrity. Upgrading the lower Tower parking lot for use as the prin-

cipal parking area would move primary parking farther from the historic district. This beneficial effect would be major and long term.

Historic fabric could be lost and new visual nonhistoric elements could be introduced as a result of making historic buildings and structures accessible to people with impaired mobility to comply with the Architectural Barriers Act of 1968 and the Rehabilitation Act of 1973. The monument would develop design solutions using the *Secretary of the Interior's Standards* to meet accessibility requirements while minimizing impacts on cultural resources. Impacts would be assessed when specific proposals were evaluated. Any actions would be expected to have no more than a minor effect on historic buildings and structures.

Visitor activity and traffic congestion would continue in the historic district at the base of the Tower and in the viewshed from the Tower. The buildings were intended to facilitate visitor use of the area, but the degree of congestion has increased so much over the years that there is a minor adverse impact on the historic setting during peak times each year, and this impact would continue under alternative 2.

Removing the prairie dog town pullouts would restore the original alignment of the national register-listed main road in that area. This would be a minor long-term benefit for historic resources.

The construction activities of alternative 2 would result in visual and auditory intrusions; however, such adverse impacts would be short term and minor.

Conclusion: Overall, the long-term effects on historic resources from alternative 2 would be minor to major and beneficial.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: The number and integrity of CCC-made roadway features (such as rock walls and culvert headwalls) would continue to be gradually reduced by traffic, erosion, natural processes, and highway construction. With continuing aging of these 1930s structures, there would be a potential for accelerated deterioration from natural causes, which could result in the loss of structural integrity and original materials.

Repaving the main monument road would not affect the historic buildings. Burying the culvert headwall would have a minor long-term adverse effect on one roadway contributing feature A moderate long-term beneficial effect would result from rehabilitating the roadway. Traffic, natural processes, and new construction could damage or destroy CCC roadway structures, resulting in moderate adverse cumulative impacts in the long term.

Overall, the above past, present, and future actions, in conjunction with the actions of this alternative, would result in long-term minor to moderate adverse impacts on historic resources. Most of these impacts would result from past actions and processes, including traffic, erosion, natural processes, and highway construction. The actions of this alternative would contribute a very small increment to the overall cumulative impact.

Section 106 Summary: This summary was prepared with the use of the definitions of section 106 of the National Historic Preservation Act.

Under the regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) addressing the criteria of effect and adverse effect, the National Park Service finds that converting the upper Tower parking area to a pedestrian plaza and moving the principal parking farther

away to the lower parking area would have an effect that would not be adverse.

Continuing the requirement for permits to use the northwest and special permit camping areas would have an effect on ethnographic resources that would not be adverse.

The actions of this alternative, taken together, would have an effect on cultural resources that would not be adverse.

VISITOR EXPERIENCE

Visitors' Experience of Monument Resources

Reduced visitation levels in this alternative would decrease crowding, noise, and disruption in the Tower area. The peak use levels would be lowered from the current rate, but use during off-peak times might increase somewhat. Over time, most visitors would benefit from the overall reduction in crowding and traffic, which would offer some relief from the associated frustration and distraction. This would be a long term major beneficial effect for visitors during the peak season.

Replacing the existing paved parking area with a pedestrian plaza and parking vehicles in the existing overflow parking area (farther from the base of the Tower) would make the setting for the Tower quieter and more contemplative. For many visitors, this setting would be much more commensurate with the Tower's meaning and significance. Views from the Tower and areas at its base would be enhanced by the reduction of pavement near the Tower and vegetative screening of parked vehicles; however, paving the existing overflow parking area could have a minor adverse effect on the view. Overall, because most visitors would benefit from an improved experience of the monument's prime resources, these changes would result in major long term beneficial effects, particularly for visitors arriving during peak use times.

Construction activities to modify Tower area facilities and remove the parking pullouts at the prairie dog town would result in short-term adverse impacts. The visitor experience would be affected by noise from construction vehicles and equipment, visual intrusions from ground and vegetation disturbance, more traffic, the presence of large construction vehicles, and the general disruption of circulation and activities. These effects, although short term, could be moderate to major because they would occur in the prime resource areas of the monument. These effects would be particularly severe for visitors who might have only one opportunity to visit Devils Tower and whose experiences were degraded by construction activities.

Providing new access to the prairie dog town and improving the area trails would enhance most visitors' experience because they would be able to watch prairie dogs in a quieter setting, without the traffic congestion and safety concerns that are present at the current pullouts along the main road. Some visitors might want to stop along the road when the prairie dogs could first be seen, but overall these changes would result in a long term moderate beneficial effect for visitors. Eliminating parked vehicles from pullouts along the main road would result in a minor beneficial effect on the viewshed from the Tower and the trails.

Converting campground loop A to parking for towed vehicles would reduce the availability of campsites. This effect, although long term, would be minor because the existing sites are rarely fully used, and people could still camp in loop B. Noise from vehicles in the parking area could mask natural sounds, but this impact would be minor because most vehicle dropoff and pickup would occur earlier in the day than most visitors would be in the campground.

Views from the Tower and the monument trails could be affected by increased pavement in the parking area and the presence of vehicles parked there. This minor impact would be long term, although the area would be screened somewhat by vegetation. Some of this impact would also be balanced by removing the existing informal dropoff area. Short-term effects from construction activities would occur as described above,

but they would be minor because of the small scale of the construction and the small number of visitors affected, and because the construction would not be in prime resource areas.

Removing one road segment and closing another to visitor use in the northwest corner of the monument would result in long-term beneficial effects, as would managing use in a large area to protect the quiet, contemplative character of that experience. The viewshed would be improved, and vehicle traffic would disrupt natural sounds infrequently. A small number of visitors would be affected directly by these changes, and continuing to provide opportunities for solitude and quieter experiences would be a major benefit for visitors seeking quieter experiences. Reducing roads in the area could make access more difficult for some visitors, but this would be a minor impact because of the relatively short distances from the remaining road and the small number of people that would be affected.

Converting two-track administrative roads to single-track trail segments would have a long term minor beneficial effect on the natural character of the trail experience. The special permit camping area, although not heavily used and not fundamental to the monument's mission, offers expanded opportunities for group recreation. However, eliminating that area and rehabilitating its soils and vegetation would increase the overall natural setting. This would be a long-term minor effect because the disruption caused by the existing use and condition of the area is minor. Because the number of visitors affected would be small, this would be a minor adverse impact.

Because this alternative would involve no changes to administrative headquarters, the impacts there would be the same as in the no-action alternative.

Access and Freedom to Go at One's Own Pace

In this alternative the levels of visitor use probably would be managed by a reservation system, at least during peak use times. Visitors could not come to the monument spontaneously during peak times, and some would be inconvenienced by being unable to come whenever they would like. Some people might be unable to come at all if they could not get reservations to fit their schedules. Based on public responses to the concept of a reservation system, this would be a long-term major adverse effect on visitors because many would be affected, and many place a high value on spontaneity.

Removing visitor parking from the existing paved area would slightly increase the walking distance to visitor facilities and the Tower's base. This could particularly affect visitors with impaired mobility. Because the distance would not be great and design could minimize the grade, this long-term impact would be minor.

Redesigning the approach would make access to the Tower trail easier. Because the current approach is steep, redesign could improve access to the base of the Tower for a significant number of visitors, resulting in a long-term moderate to major beneficial effect.

Reducing visitor numbers at peak times would shorten the entrance station waiting lines, reducing the chance of visitor frustration. Improved traffic flow at the entrance station would be a negligible to minor beneficial effect on most visitors, but the effect could be moderate at peak times because then more people would be affected.

Visitors' freedom of movement would be restricted by reducing road access in the northwest corner of the monument and requiring use permits. This long-term impact would be minor because of the small number of visitors affected. However, the effect on visitors with impaired mobility could be moderate because vehicle access to parts of the area would be lost.

Access to Orientation and Interpretation

Opportunities for ranger contact and for more effective dissemination of interpretation and

information would be greatly enhanced by the modifications in the Tower area, the reduced crowding, and the improvements in the prairie dog viewing area. Visitors would be less distracted in the visitor center, and the increased space in the pedestrian plaza and at the prairie dog town would allow for better, quieter, less disrupted interpretive programs. More effective interpretation would result in greater visitor understanding of the monument's significance. Better orientation information would help visitors make the best use of their time. Long-term improvements over the current information and interpretation programs (which are hampered by general crowding) would benefit most visitors; this would be a major beneficial effect.

Visitor Safety

Reducing traffic at the Tower area and removing the parking pullouts at the prairie dog town would decrease the potential for vehicle and vehicle-pedestrian accidents. Although vehicle accidents have been infrequent, reducing the risks would be a long term moderate beneficial effect because the results of an accident could be major to the visitors involved.

Cumulative Effects: Although past actions have affected the visitor experience, no ongoing or future actions such as the repaving of the main monument road would have a perceptible impact on it. The actions of alternative 2 would not add appreciably to cumulative impacts.

Conclusion: Over the long term, most visitors would benefit from the overall reduction in crowding and traffic brought about by alternative 2; and this would be a major beneficial effect on visitors' experiences during the peak season. Redesigning the access to the Tower trail could improve access to the base of the Tower for a significant number of visitors; therefore, this would be a moderate to major beneficial effect. Opportunities for ranger contact and for more effective dissemination of interpretation and information would be greatly enhanced by the modifications in the Tower area, the reduced crowding, and the improvements to the prairie dog viewing area.

Some visitors would be inconvenienced by being unable to visit the monument spontaneously during peak times. Some people might not be able to visit at all if they could not get reservations to fit their schedules. Public responses to the concept of a reservation system have indicated that this would be a major adverse impact on visitors, many of whom place a high value on spontaneity.

Converting campground loop A to parking for towed vehicles would reduce the availability of campsites. This adverse effect would be minor because the existing sites are rarely fully used, and people could still camp in loop B.

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

SOCIOECONOMIC RESOURCES

Businesses and Neighbors

With the entrance station left in its current location in the middle of the entrance road, at the point where the monument abuts the Devils Tower Trading Post and the KOA General Store, those businesses would continue to have a distinct competitive advantage over commercial outlets farther from the monument entrance. This would be a moderate beneficial long-term effect for the Trading Post and KOA.

As described before, a transportation study (Robert Peccia & Associates 1999) indicated that 34% of the vehicles entering Devils Tower National Monument first enter the retail area

immediately outside the entrance; 41% of the vehicles leaving enter the retail area immediately outside the entrance. Anecdotal reports from these businesses indicate that lines of traffic block monument visitors from entering the businesses. Without data on how many visitors want to stop at the retail area, and assuming that the same vehicles are not stopping upon entrance and exit, it appears that about 75% of vehicles manage to stop at the retail area. Assuming that all the vehicles that do not stop have not stopped because the people in them do not want to stop, this would be a negligible long-term adverse impact occurring at peak times. Assuming that all 25% of the vehicles that do not stop contain visitors who would like to stop but are prevented from doing so by the traffic, this intermittent adverse impact would be minor, occurring during peak use periods.

Converting campground loop A to a trailer drop-off area and a bus parking space (roughly 20 campsites) would eliminate about 40% of the monument's campsites. This would not impact access to camping at Devils Tower throughout most of the camping season.

In peak use periods, the remaining 30 campsites in loop B might not be sufficient to accommodate all visitors interested in camping there. There are a number of other camping options in the surrounding area, and neighboring campgrounds have enough capacity to absorb the campers who otherwise would have stayed at Devils Tower. For campers interested in being as close to the monument as possible, the KOA campground immediately outside the entrance to Devils Tower would be the most likely beneficiary of the new business. For people looking for the least expensive camping option, free camping is available at Tower View and on nearby National Forest property.

The overall number of people camping in the Devils Tower area would not decrease from reducing the number of campsites in the monument. Consequently, overall visitor spending in the region would not decline. If, over the course of the camping season, 500 fewer Devils Tower campsites were occupied, and these campers went to other campgrounds instead, the revenues from camping at these private campgrounds would increase by $12,500 per year, a minor beneficial long-term effect on local businesses.

Removing the west road and revegetating the area would eliminate one access/egress route currently used by one neighboring landowner, causing him to change travel routes. The monument staff says that at least one other route is available; therefore, this long-term adverse impact on one landowner would be negligible.

Conclusion: The Devils Tower Trading Post and the KOA General Store would continue to have a competitive advantage over commercial outlets farther from the monument entrance. This would be a moderate beneficial long-term effect for those businesses. If campers displaced from Devils Tower chose to camp at the KOA or Tower View campgrounds, that could result in a minor beneficial long-term effect on revenues ($12,500) at those campgrounds.

Eliminating an access/egress route for one landowner by closing the west road would result in a long-term adverse impact that would be negligible because there is at least one alternative route.

Local and Regional Economy

Revenue from camping in the monument is not taxable to local authorities, as is camping outside the monument; therefore, this alternative would result in a $12,500 increase in taxable revenues. This would be a minor beneficial long term effect on local taxing authorities.

The National Park Service's cost estimate for the construction work of alternative 2 is roughly $1 million, of which approximately 50% would go toward labor, with the rest going for materials and services, according to rule-of-thumb estimates for the construction industry. This translates into the equivalent of 16 one-year construction jobs over the duration of the various

construction periods. (The construction projects of this alternative, which could last from a week to more than a year, could include widening or narrowing monument roads, converting roads to hiking trails, converting the upper parking lot to a pedestrian plaza, and preparing new exhibits and orientation space. The Devils Tower staff might complete some projects, but private contractors would be hired for most of the work.) Because 16 jobs is a very small portion of 2,100, this would be a minor short-term beneficial effect on the local and regional economy.

Short-term construction also would have certain spinoff effects. Data in the *1998 Occupational Employment Statistics Wage Survey* (Wyo. Dept. of Employment 1998) show that construction jobs in the Devils Tower region pay a mean hourly wage of $12.41. The 16 one-year jobs would have a payroll of about $500,000. Construction laborers would add to the food, fuel, and possibly lodging expenditures made in the region for the duration of the construction period. This would directly benefit retailers immediately outside the Devils Tower National Monument entrance and in the nearest towns. This would be a minor short-term beneficial effect on the local and regional economy.

Sales taxes collected on the expenditures of additional workers would benefit local jurisdictions. According to the Crook County Treasurer's Office, Crook County's sales tax rate is 5%. Thus, sales taxes resulting from alternative 2 would be a minor short-term beneficial effect on Crook County revenues.

Assuming that construction materials purchased by contractors would not be subject to the National Park Service's tax exempt status, local jurisdictions would have tax revenues on $500,000 in purchases of construction materials. The collection of about $25,000 in tax revenues would be a minor short-term beneficial effect on county sales tax revenues.

Construction impacts would be felt primarily while construction was taking place, which would vary by project. Multiple projects could occur simultaneously. Over roughly three years, dollars spent on construction would be circulated throughout the regional economy from alternative 2. According to data from the U.S. Bureau of Economic Analysis (BEA), the estimated amount of spinoff income generated by $1 million of new construction would be an additional total of $550,000 to $730,000 throughout the state economy (above and beyond the $1 million in construction). The range of spinoff income reflects the different BEA multipliers for new construction (1.5532) or maintenance and repair construction (1.7318) in Wyoming. This would be a minor short-term beneficial effect on the local and regional economy.

March 2000 unemployment rates in the Devils Tower region were higher than the statewide unemployment rate of 4.0% (4.4% in Campbell County, 6.8% in Crook County, and 5.4% in Weston County). This is not considered abnormal for the region. It is also important to note that regional unemployment rates typically decline with seasonal employment in spring and summer, when most construction takes place.

The short-term construction projects of alternative 2 would contribute only a small percentage of the regional economy's jobs and earnings. According to the Wyoming Department of Employment, approximately 2,100 of the 26,500-person labor force in Crook, Campbell, and Weston Counties were employed in the construction industry during the third quarter of 1999 (1,900 of them in Campbell County). Consequently, the construction at Devils Tower National Monument under alternative 2 would have a negligible effect on overall employment in the region.

Conclusion: The short-term construction projects of alternative 2 would have a small beneficial effect on employment opportunities and on the local and regional economy, including indirect effects on local businesses and tax revenues. The equivalent of about 16 one-year jobs would be created during the construction period, with a total payroll of roughly $500,000. The total impact that the proposed construction would have on Wyoming's economy would be

up to $1,730,000. Construction at Devils Tower National Monument proposed under alternative 2 would have a negligible impact on overall employment in the region.

Cumulative Effects: Although past actions have affected socioeconomic resources, no ongoing or future actions, such as the paving of the main monument road, would have a perceptible socioeconomic impact. The actions of alternative 2, together with those in the cumulative impact scenario, would not appreciably add to cumulative impacts.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts that would result from alternative 2. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are described in the previous analysis.

Natural Resources

The natural and beneficial values of floodplain areas would continue to be compromised by the development within them. This continuing long-term adverse impact on natural processes would be major. Although severe flooding has been infrequent and risks are minor to moderate, flooding could result in major adverse impacts on the visitors involved.

Visitor Experience

Modifying the Tower facilities and removing the parking pullouts at the prairie dog town would result in short-term impacts from construction activities. The visitor experience would be affected by noise from construction vehicles and equipment, visual intrusions from ground and vegetation disturbance, more traffic, the presence of large construction vehicles, and general disruption of circulation and activities. These effects, although short term (less than one year) could be moderate to major because they would take place in the monument's prime resource areas. These effects would be particularly severe for visitors who might have only one opportunity to visit the monument and whose experiences were degraded by construction activities.

In this alternative the levels of visitor use probably would be managed by a reservation system, at least at peak use times. Visitors could not come to the monument spontaneously during peak times, and some would be inconvenienced by being unable to come whenever they would like. Some people might be unable to come at all if they could not get reservations to fit their schedules. Based on public responses to the concept of a reservation system, this would be a major adverse effect on visitors because many place a high value on spontaneity.

Reducing road access in the monument's northwest corner and requiring use permits would increase restrictions on visitor freedom of movement. Because of the small number of visitors affected, this long-term impact would be minor. However, for visitors with impaired mobility, the long-term effect would be moderate because of the loss of vehicle access to parts of the area.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Some regrading at the lower Tower parking area could result in the loss of a small part of the natural soil profile on less than 1 acre. This loss would be permanent and irreversible.

Severe flooding has been infrequent, and the risks are minor to moderate, but flooding could result in major adverse impacts on the visitors involved. Any loss of life would be irreversible.

RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

In alternative 2, the short-term disturbance of soils, vegetation, and wildlife habitat from constructing facilities and rehabilitating disturbed areas and the long-term loss of vegetation and

wildlife habitat from added paving would be more than offset by the long-term restoration of vegetation and wildlife habitat.

Reducing the number of monument visitors during peak times would decrease crowding and traffic and lead to a major long-term improvement in the visitor experience. The monument's air quality and natural sound would be improved at peak times over the long term. If visitors who could not get into the monument at peak times shifted their visits to off-peak times, there might be minor long-term degradation of air quality and natural sound at those times. The visitor experience would not be diminished at peak times because visitor facilities and programs could handle the peak visitation level.

For American Indians and other visitors, the short-term visual intrusions from demolition, construction, and rehabilitation would give way to long-term improvements in the historic setting of the national register-listed historic district at the Tower, the ethnographic values at the Tower, and the views from the Tower.

IMPAIRMENT

The monument's resources and values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

EFFECTS OF ALTERNATIVE 3 (PREFERRED ALTERNATIVE)

NATURAL RESOURCES

Soils

In the gravel-surfaced lower parking area at the base of the tower, some regrading and possible construction of retaining walls would be necessary under alternative 3 before the area was paved. A small part of the natural soil profile could be lost on less than 1 acre. This would be a minor long-term adverse impact.

Several impacts would result from the alternative 3 actions of converting the upper parking area at the Tower to a pedestrian plaza, paving the graveled parking area at the base of the Tower, rehabilitating one track of the Joyner Ridge trail, building a spur connecting the Joyner Ridge and Red Beds trails, widening the trail around the prairie dog town (gravel), developing a shuttle staging area, building a new intersection off the main road leading to the shuttle staging area, relocating the entrance station farther inside the monument, removing the campground, enlarging the headquarters building, and replacing the current prairie dog town pullouts with two enlarged pullouts.

These actions would subject about 15 acres of soils to short-term disturbance. Most of the areas that would be affected have been disturbed previously. Erosion on those sites would be accelerated at least temporarily, until drainage structures were fully operational and vegetation had recovered.

To mitigate adverse impacts, construction activity would be restricted to the minimum area required for building or rehabilitating, topsoil would be retained and replaced where possible to conserve the available organic matter, and most visitor developments would be built on slopes of less than 15% to minimize the soil erosion from foot traffic. Trails where heavy foot traffic was expected would be paved, visitors would be encouraged to stay on maintained trails, and special designs would be used for trail construction in areas with high slope and easily eroded soils. The adverse impacts on soils from increased erosion would be minor and short term.

The net increase in paved surfaces (including gravel) in this alternative would be about 4 acres. This would result from the actions described above for soil disturbance. In areas with hardened surfaces, the direct inflow of water to soil would be partially or totally eliminated, and precipitation would be collected and diverted to natural drainages. Runoff not collected and diverted to natural drainages would pour out onto adjacent areas, increasing the local soil moisture regime. Increased runoff in these areas would result in localized increases in erosion, changes in soil nutrient transport, and changes in the natural composition of vegetation.

In addition to conserving and replacing topsoil from disturbed areas to minimize the loss of organic material, the National Park Service would reseed these areas with native species to speed the rate of recovery and to minimize the encroachment of invading species. Altered vegetative composition would create slight changes in the soil chemistry. These impacts have already occurred to some degree because all the areas involved have been previously disturbed. The adverse impacts on soil erosion, soil nutrient transport, and vegetative composition from an increase in hardened surfaces would be minor and long term.

A total of 9 acres of soil would be rehabilitated by creating the pedestrian plaza, removing the old pullouts from the prairie dog town, rehabilitating one track of the Joyner Ridge trail, and restoring the developed camping area. This beneficial effect would be minor and long term.

Conclusion: A small part of the natural soil profile would be lost on less than 1 acre. Despite efforts to prevent soil erosion, some soil probably would be eroded on 15 acres where construction and rehabilitation would be carried out. Additional hardened surfaces would cover 4

acres of soil, and 9 acres would be rehabilitated. Therefore, the adverse impacts on soils from the preferred alternative would be minor and long term.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Vegetation

Approximately 6 acres of disturbed vegetation would be lost from modifying the graveled parking area at the base of the Tower, widening the prairie dog town trail, developing a shuttle staging area, relocating the entrance station, enlarging headquarters, and creating a trail spur. This adverse impact would be minor and long term.

Clearing some vegetation during construction could increase the relative abundance of species that invade disturbed areas. Increased erosion at these areas could expose root systems and lead to the subsequent death of more mesic plants (those needing a moderate amount of water). This adverse impact on previously disturbed vegetation would be minor and long term.

Topsoil would be scraped off and set aside before construction began. To allow more rapid recovery of native vegetation and to minimize the encroachment of invading species, the topsoil subsequently would be replaced and reseeded with native species gathered in the monument or seeds gathered in the monument and propagated elsewhere. During the recovery period, the artificially seeded or replanted native vegetation would not be identical in composition to vegetation in adjacent areas. A reduction in the organic content of the soil would cause a slight change in species composition for several years. Because the affected area is already disturbed and the described mitigating measures would be taken, this adverse impact on previously disturbed vegetation would be minor and long term.

The preservation of a prairie remnant in the northwest corner of the monument would be enhanced by closing the west and north roads to all but administrative and private use and reseeding one track of Joyner Ridge trail with native species. This beneficial effect on the prairie remnant would be minor and long term.

Approximately 9 acres would be revegetated at Joyner Ridge trail, the old prairie dog pullouts, the picnic area, the amphitheater, the trailer dropoff area, and the developed campground. Reseeding these areas with native species would speed the rate of recovery and minimize the encroachment of invading species. This beneficial effect on vegetation would be minor and long term.

Conclusion: About 6 acres of disturbed vegetation would be lost, and 9 acres would be revegetated under this alternative. The relative abundance of invasive species could be increased by clearing some vegetation during construction. Increased erosion at cleared areas could expose root systems and lead to the death of more mesic plants. The preservation of a prairie remnant in the northwest corner of the monument would be enhanced. Overall, implementing the preferred alternative would result in minor long-term adverse impacts on vegetation.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wildlife

Approximately 6 acres of wildlife habitat would be lost through enlarging the graveled parking area at the base of the Tower, building a trail spur, widening the trail through the prairie dog town, building a new intersection, relocating the entrance station, developing a shuttle staging area, and enlarging the headquarters building. Every effort would be made to avoid harm to the large cottonwood trees in the campground area, which provide habitat for wildlife. This adverse impact on already disturbed wildlife habitat would be minor and long term.

A long-term increase of about 9 acres of wildlife habitat would be brought about by restoring to natural conditions one lane of the two-track Joyner Ridge trail, the former pullouts at the prairie dog town, and the developed campground. This beneficial effect on wildlife would be minor and long term.

This alternative would result in a net gain of about 3 acres of wildlife habitat, which would be a minor beneficial effect in the long term.

Invertebrates and small vertebrates can be destroyed by construction or displaced by changes in vegetation that result from construction. Small animals and birds usually are displaced and disrupted by the development of an area. Most areas that would be developed under alternative 3 are already disturbed. The adverse impact on invertebrates and small vertebrates would be negligible and short term.

Conclusion: Alternative 3 would result in the loss of approximately 6 acres of wildlife habitat, and 9 acres would be rehabilitated, so the net gain would be about 3 acres. Construction would destroy invertebrates and small vertebrates and probably displace and disrupt small mammals and birds. Overall, implementing the preferred alternative would result in minor long-term beneficial effects on wildlife.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Air Quality

The air quality at the base of the Tower would improve because visitors' vehicles would not go there during peak times. The air quality also would be improved because circling the parking lot to find a parking space would become unnecessary. There would be increased bus traffic, but drivers would not be allowed to idle bus engines, and buses would not be queuing because they would be on a schedule. This minor beneficial effect would last approximately four hours per day for 17 weeks each year.

Requiring visitors to use the shuttle bus to get to the base of the Tower at peak times could result in the degradation of air quality because the level of bus activity in the monument could be high. Air quality would be most compromised at the shuttle staging area because automobile traffic, parking, and shuttle activity would be added. Shuttles would use the best available practical, low emission technology. The adverse effects on air quality from the shuttle system would be minor and short term.

Removing the campground would improve the air quality because the associated wood smoke would be eliminated. This would be a minor beneficial long-term effect on air quality.

Construction would cause only temporary, localized impacts on air quality, such as dust and diesel fumes from heavy equipment. This minor adverse effect would be short term.

Conclusion: Establishing a shuttle system probably would improve the air quality at the base of the Tower and degrade it at the shuttle staging during peak times. The monument's air

quality would be improved by the absence of wood smoke when the campground was closed. The overall effect of alternative 3 on air quality in the peak season would be adverse minor short-term changes in air quality at the shuttle staging area

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Threatened, Endangered, and Candidate Species

The habituation of prairie dogs to unnatural foods would continue. The monument staff would continue to educate visitors not to feed human food to prairie dogs. This would result in a minor beneficial long-term effect on prairie dogs.

Widening the trail around the prairie dog town and covering it with gravel would reduce the habitat slightly (0.3 acre) and could lead to stress on individual prairie dogs along the trail edge. Widening probably would discourage visitors from wandering off the trail and therefore benefit the prairie dogs. Any displaced prairie dogs would move their burrows outside the new trail perimeter. The adverse impact on prairie dogs would be negligible and long term.

Conclusion: A net loss of 0.8 acre in prairie dog habitat would be a minor long-term adverse impact on prairie dogs.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wetlands

Enlarging the headquarters building and moving the parking lot to the back of the building would further encroach on 0.04 acre of wetland and result in the long-term loss of natural and beneficial values on less than 0.1 acre. This would be a long-term negligible impact on wetlands. Constructing the additions to the headquarters building would result in short-term disturbance of less than 0.5 acre of the wetland. This would be a minor long-term adverse impact on wetlands. Appendix E contains a statement of findings for wetlands.

Conclusion: Enlarging the headquarters building and moving the parking lot to the back of the building would result in a long-term loss of about 0.04 acre of wetland, a long-term negligible adverse impact. The effect of a short-term disturbance of 0.5 acre of wetland by construction would be minor.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Floodplains

Natural and Beneficial Floodplain Values. The natural and beneficial values of floodplain areas would be restored in the area from which the campground, amphitheater, picnic area, and trailer dropoff would be removed. Removing the

campground would eliminate the possibility that campground fixtures and visitor camping equipment would enter floodwaters and clog the floodway. This major beneficial effect on natural processes would be long term.

Flooding. Removing the 50-site campground and related structures and rehabilitating that part of the 100-year floodplain would eliminate the hazard to campers from flooding of the Belle Fourche River. Severe flooding has been infrequent, and the risks are minor to moderate, but the removal of the risk of flooding would be a major beneficial long-term effect on the visitors who might have been at risk.

Conclusion: Removing the 50-site campground and related structures and rehabilitating the 100-year floodplain would restore natural and beneficial values of that area, a major long-term beneficial effect on the floodplain. Removing the campground from the floodplain also would result in a major beneficial effect on the visitors who might have been at risk.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Agriculture (including dryland farming) and ranching uses have greatly reduced native prairie plants and animals and led to the alteration and erosion of soils. Wildlife have been affected by being displaced, and habitat has been lost through agricultural uses, animals, and plants. Probably the greatest impact on wildlife at the monument has been the restriction of movement caused by fencing much of the perimeter along the south, east, and west boundaries. Wildlife are also disrupted by development, employees, and visitors.

If the repaving and widening of the road was approved, approximately 0.5 acre of previously disturbed herbaceous vegetation along the road would be lost. Placing riprap in several locations to reduce the erosion of drainage ditches would result in the loss of 0.01 acre of grassland. Removing and revegetating at least four existing pullouts would result in the establishment of approximately 0.2 acre of additional grassland habitat dominated by native grasses and wildflowers. Small mammals would be displaced and native vegetation would be removed by these actions.

The development of some private or state lands for tourist-related activities or for residential or other uses could increase runoff and soil compaction and could alter soil regimes and vegetative communities, as well as causing the loss of plants in some areas. Increased development outside the monument would further fragment wildlife habitat and interrupt wildlife habits and movement. Less land would be available for prairie dog habitation. Road kills of rodents, larger mammals, and birds would increase because added development probably would increase traffic. If visitation increased, bringing more traffic, the air quality would be degraded further.

"The black-tailed prairie dog has undergone severe reduction in occupied range and population in Wyoming since settlement and the advent of farming and ranching. Occupied range has been reduced by over 80% from pre-settlement" (Campbell and Clark 1981). "Similar to other parts of the historical range, the major reduction in prairie dog populations probably occurred in the early 1900s when poisoning programs began in earnest"(AZ Game and Fish Dept. 1999).

The implementation of the "Memorandum of Understanding among State Fish and Wildlife Agencies within Black-tailed Prairie Dog Range: Conservation and Management of Black-tailed Prairie Dog in North America" (9 of 11 states) might lead to the development and implementation of comprehensive state plans These plans would be designed to maintain the broadest dis-

tribution and greatest abundance possible within the fiscal realities of the state agencies and cooperating partners.

Cooperative partnerships might be developed with interested individuals and with private, state, tribal, and federal land managers. However, implementing such plans would take several years. For the time being, it is not expected that landowners outside the monument would allow prairie dogs to move onto their land. Therefore, the prairie dog colony at Devils Tower would be unlikely to grow large enough to support ferrets and mountain plover. The population in the monument probably would continue to be small and isolated.

As part of road repaving, wooden posts would be replaced along the road and at pullouts adjacent to the prairie dog colony. This could temporarily displace individual animals but would not be likely to result in mortality. In areas occupied by prairie dogs, the centerline of WY 110 would be shifted north to avoid impacts on numerous burrows adjacent to the southern edge of the road (NPS 2000a).

The construction of the Keyhole Dam has greatly reduced the extent of the floodplain, associated wetlands, and the natural and beneficial values of floodplains and wetlands. At least some wetlands in the area probably have been filled to make more land available for growing crops. Cattle and sheep probably have been allowed to use some wetland and riparian areas in the vicinity of the monument. These practices decrease the area of wetlands and degrade natural and beneficial floodplain values in exchange for benefits to agricultural uses.

NPS structures and visitor uses in wetland and floodplain areas contribute to the loss of natural and beneficial values. Removing the campground, amphitheater, and picnic area from the 100-year floodplain and restoring that area would result in a moderate long-term beneficial effect on floodplain values. Enlarging the headquarters building and moving the parking area to the back of the building would result in the long-term loss of 0.04 acre of wetland and a short-term disturbance of 0.5 acre. To compensate for the 0.04 acre of wetland lost, a new wetland would be constructed as described in the "Statement of Findings" in appendix E. The presence of the dam would result in major long-term reductions in area and in beneficial values in floodplains and wetlands downstream of the dam on the Belle Fourche River. Repaving the main monument road would not result in any effect on any floodplain, wetland, or other water resources.

Overall, the above past, present, and future actions, in conjunction with the impacts of this alternative, would result in major long-term adverse impacts on natural resources, including soils, vegetation, wildlife, prairie dogs, wetlands, and floodplains. Most impacts would result from previous actions, including agriculture, ranching, and dam construction. The impacts of alternative 3 would contribute a very small increment to the overall cumulative impact.

CULTURAL RESOURCES

Ethnographic Resources

The viewshed in the Tower area would be improved through converting the paved upper parking area to a pedestrian plaza, removing the prairie dog town pullouts, and rehabilitating trails and disturbed areas. This would leave fewer traffic-related visual intrusions on culturally sensitive areas. Although the shuttles might be noisier than automobiles, the traffic noise would be of shorter duration with the shuttle system operating at peak times, and there would be fewer cars at the base of the Tower. Requiring visitors to use the shuttle or other nonmotorized means to reach the base of the Tower in peak times would reduce crowding at the base of the Tower. These actions would improve the ethnographic context of the area, provide more opportunities for solitude and quiet for traditional uses, and benefit American Indian tribes that might want to conduct religious activities at the Tower. This long-term beneficial effect on ethnographic resources would be moderate.

Reducing the concentrations of people in the monument's northwest corner would give more protection to culturally sensitive areas and increase the opportunities for solitude in a larger area than in alternative 1. This beneficial effect on traditional cultural practices would be minor and long term.

Because most American Indian religious practitioners come as individuals or in very small groups, the permitting requirements would result in a negligible long-term adverse impact on their traditional cultural practices.

Adding high visibility visitor use areas would result in the perception of greater human presence in the viewshed and would potentially disturb traditional religious cultural practices. This adverse impact would be moderate and long term.

Adding a spur trail between the Red Beds trail and the Joyner Ridge trail could bring more visitors into an area now little used, which offers great solitude for religious ceremonies. Funneling more visitors into that area could change the perception of solitude. This adverse impact would be minor and long term.

Not allowing visitors on the north and west roads would reduce visual and auditory intrusions in this culturally sensitive area and increase the sense of solitude. This beneficial effect would be minor and long term. Reducing road access to traditional areas would not impede access. This long-term adverse impact would be negligible.

Upgrading and formalizing the gravel-surfaced parking area at the base of the Tower would move the intrusion on the ethnographically sensitive area farther away. This long-term beneficial effect would be moderate.

Discontinuing the use of the special permit camping area could inconvenience up to two parties of American Indians per year. No one has used the campground since 1999. This would be a minor long-term adverse impact on American Indians who might want to camp there.

Visual and auditory intrusions would occur in the vicinity of all construction and rehabilitation activities. This minor adverse impact would be short term.

Conclusion: Construction would have a minor short-term adverse impact on ethnographic resources. Some adverse impacts also would result from adding high visibility visitor use areas and from adding a spur trail between the Red Beds and Joyner Ridge trails. However, on balance, alternative 3 would result in a minor beneficial effect on ethnographic resources in the long term. This is because ethnographic resources would benefit from removing the paved upper parking area at the base of the Tower, creating a pedestrian plaza, moving the main parking area farther away from the base of the Tower, decreasing the number of prairie dog town pullouts, and rehabilitating trails and disturbed areas. Rehabilitating the developed campground, potentially allowing fewer visitors at one time at the base of the Tower, reducing the concentrations of people, establishing a shuttle system, and eliminating visitor access to the north and west roads also would benefit ethnographic resources.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Although past actions have affected ethnographic resources, no ongoing or future actions such as repaving the main road would have a perceptible impact on them. The actions of alternative 3 would not add appreciably to cumulative impacts.

Historic Resources

Removing the paved parking area at the base of the Tower and establishing a pedestrian plaza would partially restore the setting of the historic district listed on the national register, improve its integrity, and remove some visitor intrusions. Upgrading the graveled parking area at the base of the Tower for use as the principal parking area would move primary parking farther from the historic district. This beneficial effect on historic resources would be a moderate and long term.

Operating a shuttle during peak visitation periods and scheduling tour bus visits to the Tower would result in fewer traffic-related visual intrusions on culturally sensitive areas. This moderate long-term beneficial effect would occur during peak use periods.

Construction activities would cause visual and auditory intrusions. These short-term adverse impacts would be minor.

Conclusion: Visual and auditory intrusions from construction would result in short-term adverse impacts on historic resources. Beneficial effects on historic resources would result from removing the paved parking at the base of the Tower, establishing a pedestrian plaza, operating a shuttle during peak visitation periods, and scheduling tour bus visits to the Tower.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: The number and integrity of CCC-made roadway features (such as rock walls and culvert headwalls) would continue to be gradually reduced by traffic, erosion, natural processes, and highway construction. With continuing aging of these 1930s structures, there is the potential for accelerated deterioration from natural causes, which could result in the loss of structural integrity and original materials.

Repaving the main monument road would not affect the historic buildings. Burying the culvert headwall would have a minor long-term adverse impact on one roadway-contributing feature. A moderate long-term beneficial effect would result from rehabilitating the roadway. Traffic, natural processes, and new construction could damage or destroy CCC roadway structures, resulting in moderate adverse cumulative impacts in the long term.

Overall, the above past, present, and future actions, in conjunction with the actions of this alternative, would result in long-term minor to moderate adverse impacts on historic resources. Most of these impacts would result from past actions and processes, including traffic, erosion, natural processes, and highway construction. The actions of alternative 3 would contribute a very small increment to the overall cumulative impact.

Section 106 Summary: This summary was prepared with the use of the definitions of section 106 of the National Historic Preservation Act.

Under the regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) addressing the criteria of effect and adverse effect, the National Park Service finds that converting upper Tower parking area to a pedestrian plaza and moving the principal parking area farther away would have an effect that would not be adverse.

Continuing the requirement for permits to use the northwest corner of the monument would have an effect on ethnographic resources that would not be adverse.

The actions of alternative 3, taken together, would have an effect on cultural resources that would not be adverse.

VISITOR EXPERIENCE

Visitors' Experience of Monument Resources

Managed visitation levels and the use of a shuttle system during peak times would decrease crowding, noise, and disruption in the Tower area. When the shuttle was operating, there would be a change from constant traffic noise to louder but less frequent noise events. Visitors would be free of the frustrations of searching for parking places and competing with large vehicles for parking and circulation space. Many would enjoy the opportunity to experience the scenery without the pressures of driving. Adding restrooms at the shuttle staging area would decrease visitor discomfort and frustration at the inadequacy of these facilities in the Tower area. Over time, most visitors would benefit from the overall reduction in crowding and traffic. This would be a major long-term beneficial effect on the visitor experience during the peak season.

Replacing the existing paved parking area with a more natural pedestrian plaza and parking vehicles in the existing overflow parking area (farther from the base of the Tower) would make the setting for the Tower quieter and more contemplative. For many visitors, this setting would be much more commensurate with the Tower's meaning and significance. Views from the Tower and areas at its base would be enhanced by the reduction of pavement near the Tower and by the vegetative screening of parked vehicles; however, paving the existing overflow parking area could have a minor adverse effect on the view. Overall, these changes would result in major long term beneficial effects, particularly for visitors arriving during peak use times.

Modifying the Tower area facilities, constructing a shuttle staging area, and relocating the fee collection kiosk and the prairie dog town pullouts would result in short-term adverse impacts. The visitor experience would be affected by noise from construction vehicles and equipment, visual intrusions from ground and vegetation disturbance, more traffic, the presence of large construction vehicles, and general disruption of circulation. These impacts, although short term, could be moderate to major because they would occur in the monument's prime resource areas. These impacts would be particularly severe for visitors who might have only one opportunity to visit Devils Tower and whose experiences were degraded by construction activities.

New development and parking at the shuttle staging area would be visible from the Tower and the trails. The impacts on the viewshed from this development would be major because of its size. Using design and materials that would blend with the scene and maximizing vegetative screening could mitigate some of this impact. Noise would increase in the general area, and some animals and birds would be displaced, reducing visitors' opportunities for viewing wildlife. Because these impacts would not occur in prime resource areas, the long-term impacts would be considered moderate.

Removing the campground would result in the loss of overnight experiences for some visitors. Only a small percentage of visitors use the campground, but those who do value the quiet, shady character of the area. Camping is not fundamental to the mission of the monument, and other campgrounds are readily available outside the monument. For these reasons, and because a relatively small number of visitors would be affected, the loss of the campground would be a negligible to minor long-term adverse impact.

Some long-term major beneficial effects would result from managing monument use in the northwest corner to protect the quiet, contemplative character of the visitor experience and from closing two road segments to visitor use. The viewshed would be improved, and vehicle traffic would disrupt natural sounds infrequently. Although only a small percentage of visitors would be affected directly by these changes, continuing to offer opportunities for solitude and quieter experiences would be a major benefit. Reducing

road access could make access more difficult for some visitors, but this would be a minor impact because of the relatively short distances from the remaining road and the small number of visitors that would be affected.

Adding a new trail spur to connect the Joyner Ridge and Red Beds trails would enhance visitor opportunities for solitude and wildlife viewing. Because only a small number of visitors would be affected, this long-term beneficial effect would be minor.

Eliminating the special permit camping area would increase the overall natural setting. Since the disruption caused by the existing use and condition of the area is minor, this change would result in a minor effect. The special permit camping area, although rarely used, offers expanded opportunities for group recreation. However, because this activity is not fundamental to the monument's mission and the number of visitors affected would be very small, this would be a negligible long-term adverse impact on groups.

Redesigning the administrative headquarters could include relocating the parking area behind the building. This would allow better vegetative screening of the parking area from the main road; however, the viewshed from the Tower and trails would be adversely affected because of the increased size of the development. The overall effects, although long term, would be minor, considering the mixed beneficial and adverse results and the fact that there is development on the site now.

Access and Freedom to Go at One's Own Pace

Visitors would not have the freedom to move around the monument at their own pace when the shuttle system was operating, and the shuttle might increase the cost of visiting the monument. Some visitors might choose not to visit Devils Tower because they would prefer not to use the shuttle. The shuttle would also change visitors' experience from one of family or peer group to sharing at least part of the experience with groups of people unknown to them. Overall, the shuttle system would result in a long-term major adverse impact on visitors who place high value on spontaneity, privacy, and independence. This impact would be mitigated somewhat because the shuttle would operate only during the peak use season, and even at peak times there would be hours in the morning and evening when visitors would not be required to use the shuttle.

The shuttle system would increase some visitor options for different experiences. For example, trails could be hiked one-way, since visitors could ride the shuttle to trailheads or use the shuttle to return to their cars after hiking. Based on current use patterns, it appears that a small percentage of visitors would be likely to take advantage of these opportunities; therefore, the long-term beneficial effect would be minor to moderate.

Removing visitor parking from the existing paved area would slightly increase the walking distance to visitor facilities and the Tower's base. This could particularly affect visitors with impaired mobility. Because the distance would not be great and design could minimize the grade, this long term impact would be minor. During times when the shuttle was operating, visitors might be dropped off closer to the base of the Tower than the parking spaces many are able to find at present.

Redesigning the approach would make access to the Tower trail easier. Because the current approach is steep, redesign could improve access to the base of the Tower for a significant number of visitors, resulting in a long-term moderate to major beneficial effect.

Using the shuttle system during peak use times would reduce or eliminate the waiting lines at the entrance station, thereby reducing visitor frustration. This long term improvement would result in a minor beneficial effect on most visitors, but the effect could be moderate during peak use times.

Reducing road access in the northwest corner of the monument and requiring use permits would further restrict visitors' freedom of movement. Because only a small number of visitors would be affected, this long-term impact would be minor. However, for visitors with impaired mobility, the impact would be moderate because of the loss of vehicle access to some parts of the monument.

Visitors would no longer be inconvenienced by the need to drop off towed vehicles before continuing along the road to the Tower area. Because only a small number of people would be affected, this long-term beneficial effect would be minor.

Access to Orientation and Interpretation

Opportunities for ranger contact and for more effective dissemination of interpretation and information would be greatly enhanced by the modifications in the Tower area and the reduced crowding. Visitors would be less distracted in the interpretive center, and the increased space in the pedestrian plaza would allow for better, quieter, less disrupted interpretive programs. There would be opportunities for new programs, and more in-depth orientation to resources would be available at the shuttle staging area. Visitors would have time to absorb more information while waiting for the shuttle, and more interpretation could be offered on the shuttle itself.

More effective interpretation would result in greater visitor understanding of the monument's significance. Better orientation information would help visitors make the best use of their time. Long-term improvements over the current information and interpretation programs (which are hampered by general crowding) would benefit most visitors; this would be a major beneficial effect.

Visitor Safety

Reducing traffic at the Tower area and providing pullouts on both sides of the road in the prairie dog town would decrease the potential for vehicle and vehicle-pedestrian accidents. Although vehicle accidents have been infrequent, reducing the risks would be a moderate long-term beneficial effect because the results of an accident could be major to the people involved.

Conclusion: Managing visitation levels and instituting a shuttle system during peak times would decrease crowding, noise, and disruption in the Tower area. Many visitors would be able to experience the monument's scenery without the pressures of driving. Over time, most visitors would benefit from the overall reduction in crowding and traffic; this beneficial effect on the visitor experience would be major, especially during peak seasons. Redesigning the access to the Tower trail would facilitate movement to the base of the Tower for a significant number of visitors; therefore, this beneficial effect would be moderate to major.

Removing the campground would result in the loss of overnight experiences for some visitors. Only a small percentage of visitors camp in the monument, but those who do value the quiet, shady character of the area. Because a relatively small number of visitors would be affected, the loss of the campground would be a long-term minor adverse impact.

Visitors would not have the freedom to move around the monument at their own pace when the shuttle system was operating, and the shuttle might increase the cost of visiting the monument. Some visitors might choose not to visit Devils Tower because they would prefer not to use the shuttle. Overall, the shuttle system would result in a long term major adverse impact on visitors who place high value on spontaneity, privacy, and independence. This impact would be mitigated somewhat because the shuttle would operate only during the peak use season, and even during peak use times there would be hours in the morning and evening when visitors would not be required to use the shuttle.

Opportunities for ranger contact and for more effective dissemination of interpretation and

information would be greatly enhanced by the modifications in the Tower area, reduced crowding, and the improvements at the prairie dog viewing area. There would be more opportunities for new programs, and more in-depth treatment of some themes would be available at the shuttle staging area and on the shuttle itself.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Although past actions have affected the visitor experience, no ongoing or future actions such as repaving the main road would have a perceptible impact on it. The actions of alternative 3 would not add appreciably to cumulative impacts.

SOCIOECONOMIC RESOURCES

Businesses and Neighbors

The location of the Trading Post and KOA directly next to the monument would continue to give those businesses a distinct competitive advantage over commercial outlets farther from the entrance. This would be a moderate beneficial long-term effect for those businesses.

As described before, a transportation study (Robert Peccia & Associates 1999) indicates that 34% of the vehicles entering Devils Tower National Monument first enter the retail area immediately outside the entrance, 41% of the vehicles leaving enter the retail area immediately outside the entrance. Anecdotal reports from these businesses indicate that lines of traffic block monument visitors from entering the businesses. Without data on how many visitors want to stop at the retail area, and assuming that the same vehicles are not stopping upon entrance and exit, it appears that about 75% of vehicles manage to stop at the retail area. Assuming that all 25% of the vehicles that do not stop contain visitors who would like to stop but are prevented from doing so by the traffic, moving the entrance station would allow most visitors to stop even during extreme periods of peak times. This intermittent long-term beneficial effect would be minor, occurring during the entire visitor use season.

Eliminating campground loops A and B (50 sites) would not cause a serious problem because campsites are available at other places in the surrounding area, and neighboring campgrounds would be able to absorb the campers who otherwise would have stayed at Devils Tower. For campers interested in being as close to the monument as possible, the KOA campground just outside the entrance would be the most likely beneficiary of the new business. For campers looking for the least expensive camping option, free camping is available at Tower View and on nearby Forest Service property. If campers displaced from Devils Tower chose to camp at the KOA campground, that would be a moderate to major beneficial effect in the long term on KOA revenues. Campers choosing to camp at Tower View would have a minor to moderate beneficial effect on that business in the long term, because even though camping there is free, campers staying there might buy food or other items.

Eliminating camping in the monument would not decrease the overall number of people camping in the Devils Tower area. Consequently, overall visitor spending in the region would not decline. For purposes of example, the KOA campground charges roughly $25 per night for camping. At this rate, over the course of the camping season, revenues from camping at private campgrounds would increase by $102,500 per year. This would result in a moderate intermittent beneficial effect on local businesses.

Conclusion: Assuming that all 25% of vehicles that do not stop at businesses adjacent to the monument contain visitors who would

like to stop but are prevented from doing so by the traffic, moving the entrance station would allow more of these visitors to stop. This minor beneficial effect would be intermittent and long term, occurring at peak times.

Privately owned campgrounds in the region could potentially gain up to $102,500 per year in new business, a moderate and intermittent beneficial effect on local businesses in the long term.

Local and Regional Economy

Local businesses could gain revenue of approximately $102,500 per year. Revenues from camping in the area would increase by about $20,500 per year, a minor beneficial effect on the regional economy in the long term. Because revenue from camping in the monument is not taxable, as is camping outside the monument, alternative 3 would result in an increase of approximately $102,500 in taxable revenues. This would be a minor beneficial long-term effect on local taxing authorities.

Establishing a shuttle system to be operated during peak visitation periods would require that the Park Service contract with a shuttle operator. This would increase the potential income revenue for the area, a minor beneficial long-term effect on the local economy.

A report prepared for the National Park Service by BRW (Byrne 2000) indicates that between 5 and 20 shuttle drivers would be required. These would be part-time seasonal jobs. Depending on the shuttle option selected, the total hours of operation would range from 2,318 hours to 10,046 hours. The BRW report also shows that a maintenance staff of two to five persons would be required to service the shuttle vehicles under various options. Maintenance would not be required year-round, but it would extend beyond the 17-week period in which the shuttle system would operate. An administrative staff of one to four people would be required to manage the system for the same period.

Data in the *1998 Occupational Employment Statistics Wage Survey* (WY Dept. of Employment 1998) show that auto repair, services, and parking jobs in the Devils Tower region pay an hourly mean wage of $8.99 for drivers and maintenance workers and $23.79 for managers. On the basis of projected hours of operation, the total seasonal wages paid to part-time shuttle drivers would range from $20,839 to $90,314. Maintenance wages would range from $16,542 (shared by two persons) to $41,354 (shared by five persons) per year of shuttle operation. Managers' wages would total from $21,887 (for one manager) to $87,547 (for four) per year of shuttle operation.

Shuttle system employees would add to the food, fuel, and retail expenditures made at commercial enterprises near the monument. Fuel expenditures for the shuttles would be made locally, even if the fuel was obtained from Park Service fuel tanks inside the monument. This spending would be a long-term moderate benefit to retailers immediately outside the Devils Tower National Monument entrance and in nearby towns. Local jurisdictions would collect sales taxes on these expenditures, a minor long-term beneficial effect.

According to an NPS cost estimate (under an option requiring only five buses) the cost of purchasing shuttle buses would be $1,240,000. These vehicles might or might not be bought in the region. If they were purchased in the region, the estimated sales tax revenue (with a 5% sales tax rate) would be $62,000, a minor short-term beneficial effect on Crook County.

Crook County would also receive certain minimal sales and use tax revenues from the shuttle service provider, including a $60 fee for a sales tax license as well as an operating fee of $50 per vehicle per year. This would be a minor long-term beneficial effect on Crook County.

The new restroom facilities included in this alternative would not affect local sewage and water systems because water and wastewater systems would be developed in the monument.

The National Park Service's cost estimate for the construction work of alternative 3 is roughly $3.8 million (excluding the cost of shuttle vehicles), of which approximately 50% would go toward labor, with the rest going for materials and services, according to rule-of-thumb estimates for the construction industry. This translates into the equivalent of 61 one-year construction jobs over the duration of the various construction periods. (The construction projects of this alternative, which could last from a week to more than a year, could include widening or narrowing monument roads, converting roads to hiking trails, converting the upper parking lot to a pedestrian plaza, removing the campground, preparing new exhibits and orientation space, and constructing shuttle system facilities. The Devils Tower staff might complete some projects, but private contractors would be hired for most of the work. Multiple projects might occur simultaneously.)

Data in the *1998 Occupational Employment Statistics Wage Survey* (Wyo. Dept. of Employment 1998) show that construction jobs in the Devils Tower region pay an hourly mean wage of $12.41. The equivalent of 61 one-year jobs would be created during the construction period, with a total payroll of roughly $1.9 million. The short-term construction projects would contribute only a small percentage of the regional economy's jobs and earnings. According to the Wyoming Department of Employment, approximately 2,100 of the 26,500-person labor force in Crook, Campbell, and Weston Counties were employed in the construction industry during the third quarter of 1999 (1,900 of them in Campbell County). The creation of 61 one-year construction jobs at Devils Tower would represent a small portion of the 2,100 construction jobs in the area. Therefore, the construction at Devils Tower under alternative 3 would have a minor short-term beneficial effect on the region's overall employment.

Short-term construction also would have certain spinoff effects. Construction laborers would add to the food, fuel, and possibly lodging expenditures made in the region for the duration of the construction period. This would directly benefit retailers immediately outside the Devils Tower National Monument entrance and in the nearest towns. This minor beneficial effect would be short term.

Sales taxes collected on the expenditures of construction laborers would benefit local jurisdictions. According to the Crook County Treasurer's Office, Crook County's sales tax rate is 5%. Thus, sales taxes resulting from expenditures by construction laborers under alternative 3 would be a minor short-term beneficial effect on Crook County' revenues.

Assuming that construction materials purchased by contractors would not be subject to the National Park Service's tax exempt status, local jurisdictions would have tax revenues of $95,000 on $1.9 million in purchases. The collection of about $95,000 in tax revenues would be a minor short-term beneficial effect on local jurisdictions.

Construction materials (estimated at $1.9 million) could be purchased in the region, resulting in a minor short-term beneficial effect for regional suppliers.

Over roughly three years, dollars spent on construction would be circulated throughout the regional economy. According to data from the U.S. Bureau of Economic Analysis (BEA), the estimated amount of income generated throughout the state economy (above and beyond the $3.8 million in construction)by $3.8 million of new construction would be an additional total of $2,090,000 to $2,774,000. The range of spinoff income reflects the different BEA multipliers for new construction (1.5532) or maintenance and repair construction (1.7318) in Wyoming. This would be a minor long-term (3 years) beneficial effect on the regional economy.

Conclusion: Converting the 50-site campground to other uses would increase revenues from camping to area businesses by about $102,500 per year, a long-term minor beneficial effect on the regional economy. Because revenue from camping in the monument is not taxable, as is revenue from camping outside the

monument, alternative 3 would result in an increase of approximately $102,500 in taxable revenues. This would be a minor beneficial long-term effect on local taxing authorities.

Operating a shuttle service would have a small positive effect on employment opportunities and on the local and regional economy, including indirect effects on local businesses and tax revenues. Between 8 and 29 jobs could be created, with a total annual payroll of between $60,000 and $220,000. Overall, the shuttle service would contribute only a small percentage of the regional economy's jobs and earnings.

The short-term construction projects of alternative 3 would positively affect employment opportunities and the local and regional economy, including indirect effects on local businesses and tax revenues. The equivalent of 61 one-year jobs would be created during the construction period, with a total payroll of roughly $1.9 million. The total benefit to Wyoming's economy from the proposed construction would be up to $6,574,000. The short-term construction projects would contribute only a small percentage of the regional economy's jobs and earnings. The creation of 61 one-year construction jobs at Devils Tower would represent a small portion of the 2,100 construction jobs in the area; therefore, construction at Devils Tower under this alternative would have a minor short-term effect on the region's overall employment.

Over roughly three years, the $3.8 million spent on construction would circulate throughout the regional economy to generate an additional total of $2,090,000 to $2,774,000 (above and beyond the $3.8 million in construction). This would be a minor long-term (3-year) beneficial effect on the regional economy.

Cumulative Effects: Although past actions have impacted socioeconomic resources, no ongoing or future actions such as repaving the main road would have a perceptible impact on them. The actions of alternative 3 would not add appreciably to cumulative impacts.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts that would result from alternative 3. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are described in the foregoing analysis.

Cultural Resources

Adding high visibility visitor use areas would result in the perception of greater human presence in the viewshed, potentially disturbing traditional religious cultural practices. This moderate adverse impact would be long term.

Visitor Experience

Modifying the Tower facilities, constructing a new shuttle staging area, and relocating the fee collection kiosk and the prairie dog town pullouts would result in short-term impacts from construction activities. The visitor experience would be affected by noise from construction vehicles and equipment, visual intrusions from ground and vegetation disturbance, more traffic, the presence of large construction vehicles, and general disruption of circulation and activities. These effects, although short term (less than one year) could be moderate to major because they would take place in the prime resource areas. The impacts would be particularly severe for visitors who might have only one opportunity to visit the monument and whose experiences were degraded by construction activities.

New development and parking at the shuttle staging area would be visible from the Tower and the trails. Because of the size of this development, impacts on the viewshed would be major; however, some of it could be mitigated by using design and materials that would blend with the scene and by maximizing vegetative screening. Noise would increase in the general area, and some animals and birds would be displaced, reducing visitors' opportunities for viewing wildlife. Because these impacts would not

occur in prime resource areas, the impacts would be considered moderate.

Visitors would not be free to move around the monument at their own pace when the shuttle system was operating, and the shuttle might increase the cost of visiting the monument. Some visitors might choose not to visit Devils Tower because they would prefer not to use the shuttle. The shuttle would also change visitors' experiences from one of family or peer group to sharing at least part of the experience with people unknown to them. Overall, the shuttle system would result in a long-term major adverse impact on visitors who place high value on spontaneity, privacy, and independence. This impact would be mitigated somewhat because the shuttle would operate only in the peak use season, and even during peak use times there would be morning and evening hours when use of the shuttle would not be required.

Reducing road access in the monument's northwest corner and requiring use permits would increase restrictions on visitors' freedom of movement. Because of the small number of people affected, this would be a minor impact. However, for visitors with impaired mobility, the effect would be moderate because of the loss of vehicle access to parts of the area.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Some regrading of the graveled parking area at the base of the Tower could cause the loss of a small part of the natural soil profile on less than 1 acre. This loss would be permanent and irreversible.

RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

In alternative 3, construction would disturb about 15 acres of natural resource areas in the short term. Less than half of the area would be covered by hardened surfaces, and more than half would be rehabilitated over the long term.

For American Indians and other visitors, the short-term visual intrusions from demolition, construction, and rehabilitation would give way to long-term improvements in the historic setting of the national register-listed historic district at the base of the Tower and improvements in the views from the Tower. The long-term integrity of the national register-listed road could be compromised by realigning the administrative junction to accommodate the shuttle system.

Reducing visitor and traffic congestion at the base of the Tower by using a shuttle system at peak times would cause a major long-term improvement in the visitor experience. Natural and cultural resource values at the Tower and natural values at the former campground, picnic, and trailer dropoff area would be improved.

Visitors would not have the option of driving to the base of the Tower unless there were special circumstances; this would represent a loss of some freedom. However, more interpretation and information would be available at the staging area and on the shuttle en route to the Tower. Air quality and natural sound would be improved at peak times over the long term. If visitors changed their visits from peak to off-peak times so that they could avoid using the shuttle system, there might be a minor long-term degradation of air quality and natural sound during off-peak times.

IMPAIRMENT

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

EFFECTS OF ALTERNATIVE 4

NATURAL RESOURCES

Soils

In the lower parking area at the base of the Tower, some regrading and possible construction of retaining walls would be necessary before the area could be paved. A small part of the natural soil profile could be lost on less than 1 acre. This would be a minor adverse long-term impact.

A site has not been chosen, but about 5 acres outside the monument boundaries would be needed for about 5 acres of staging and other facilities. If an undisturbed site was chosen, construction activities could disrupt the natural soil profile on up to 5 acres, resulting in a minor long-term adverse impact on soils.

Approximately 10 acres of monument soils would be disturbed in the short term by the actions of alternative 4. Most areas that would be affected have been previously disturbed. Erosion would be accelerated at least temporarily on sites where soils were disturbed until drainage structures were fully operational and vegetation had recovered. Inside the monument, such an impact would result from converting the upper parking area at the base of the Tower to a pedestrian plaza, paving the gravel-surfaced parking area, rehabilitating one track of Joyner Ridge trail, building a spur connecting the Joyner Ridge and Red Beds trails, widening the trail around the prairie dog town (gravel), building a new intersection off the main road leading to the shuttle dropoff area in the campground, removing the existing prairie dog town pullouts, and removing headquarters, parking, and maintenance.

The site outside the monument would be disturbed by constructing an entrance station, a pedestrian plaza, facilities for headquarters and maintenance, passenger waiting areas, interpretive displays, restrooms, bus maintenance, and visitor parking.

To mitigate the disturbance, construction would be restricted to the minimum area needed, topsoil would be retained and replaced where possible, and the developments would be built where slopes are less than 15% to minimize soil erosion from foot traffic. To minimize damage, trails would be paved in areas where heavy foot traffic was expected, and visitors would be encouraged to stay on maintained trails. In addition, special design methods would be used in areas with high slopes and easily eroded soils. With mitigation as described, the adverse effects on soils would be minor and short term.

There would be no net increase of hardened surfaces (including gravel) inside the monument from converting the paved parking at the Tower to a pedestrian plaza, enlarging and paving the graveled parking area at the Tower, widening the existing lanes at the entrance station, widening and paving the trail in the prairie dog town, constructing a new intersection for the main road, and adding shuttle stops. Converting campground loop A to a shuttle stop would result in no net gain in hardened surface. The maximum increase in hardened surface outside the monument would be 5 acres; this would result from creating a shuttle staging area and adding facilities for headquarters and maintenance.

Because the site for a staging area outside the monument has not been selected, it is not known if the site will have been previously disturbed. The total amount of hardened surface inside the monument would be reduced by removing the paved upper parking area at the base of the Tower and replacing it with a pedestrian plaza, removing pullouts from the prairie dog town, and removing headquarters, parking, and maintenance from the administrative area.

In areas with hardened surfaces, the direct inflow of water to soil would be partially or totally eliminated, and precipitation would be collected and diverted to natural drainages. Runoff not collected and diverted to natural

drainages would pour out onto adjacent areas, increasing the local soil moisture regime. Increased runoff in these areas would result in localized increases in erosion, changes in soil nutrient transport, and changes in the natural composition of vegetation. In addition to conserving and replacing topsoil from disturbed areas to minimize the loss of organic material, these areas would be reseeded with native species to speed the rate of recovery and to minimize the encroachment of invading species. Altered vegetative composition would create slight changes in the soil chemistry. These impacts have already occurred to some degree because all the areas involved have been disturbed previously. The adverse impacts on soil erosion, soil nutrient transport, and vegetative composition from hardened surfaces would be minor and long term.

A total of 4 acres of soil would be rehabilitated under alternative 4 by creating the pedestrian plaza, removing the prairie dog town pullouts, rehabilitating one track of the Joyner Ridge trail, and moving headquarters, parking, and maintenance facilities to areas outside the monument. This minor beneficial effect would be long term.

Conclusion: Overall, up to 8 acres of natural soil profile would be lost. Despite efforts to prevent soil erosion, some soil probably would be eroded on about 10 acres that would be disturbed by construction and revegetation. A total of 4 more acres of soil would be covered with hardened surface, and 2 acres would be rehabilitated. Implementing alternative 4 would result in minor long-term adverse impacts on soils.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Vegetation

About 2 acres of vegetation in the monument would be lost from modifying the graveled parking area at the base of the Tower, widening the lanes at the entrance station and the prairie dog town trail, constructing a new intersection for the main road near the shuttle stop at the campground area, and creating a shuttle stop. About 5 acres of vegetation outside the monument would be lost through creating an entrance station, a shuttle staging area, and facilities for headquarters, maintenance, and bus storage. This adverse impact on vegetation would be minor and long term.

Clearing some vegetation during construction could increase the relative abundance of species that invade disturbed areas. Increased erosion at these areas could expose root systems and lead to the subsequent death of more mesic plants (those needing a moderate amount of water). This adverse impact would be minor and long term, probably on previously disturbed areas.

Topsoil would be scraped off and set aside before construction began. It subsequently would be replaced and reseeded with seeds of native species gathered in the monument or with seeds gathered in the monument and propagated elsewhere to allow more rapid recovery of native vegetation and to minimize the encroachment of invading species. During the recovery period, the artificially seeded or replanted native vegetation would not be identical in composition to vegetation in adjacent areas. A reduction in the organic content of the soil would cause a slight change in species composition for several years. This adverse impact on previously disturbed vegetation would be minor and long term.

The preservation of a prairie remnant in the northwest corner of the monument would be enhanced by closing the west and north roads to all but administrative and private use and reseeding one track of the Joyner Ridge trail with native species. This beneficial effect on the prairie remnant would be minor and long term.

Approximately 2 acres would be revegetated at Joyner Ridge trail, the prairie dog pullouts, headquarters, headquarters parking, and maintenance. Reseeding these areas with native species would speed the rate of recovery and minimize the encroachment of invading species. This beneficial effect on vegetation inside the monument would be minor and long term.

Conclusion: About 2 acres of disturbed vegetation inside the monument would be lost; as would up to 5 acres outside the monument. Clearing some vegetation during construction could increase the relative abundance of species that invade disturbed areas. Increased erosion at cleared areas could expose root systems, leading to the death of more mesic plants (those needing a moderate amount of water). Overall, implementing alternative 4 would result in minor long-term adverse impacts on vegetation.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wildlife

Approximately 3 acres of wildlife habitat in the monument would be lost through enlarging the graveled parking at the Tower, building a trail spur, widening the lanes at the entrance station and the trail in the prairie dog town, building a new intersection for the main road near the shuttle stop at the campground area, and creating shuttle stops. Every effort would be made to avoid harm to the large cottonwood trees in the campground area, which provide habitat for wildlife. About 5 acres of wildlife habitat outside the monument would be lost through creating an entrance station, a shuttle staging area, and facilities for headquarters, maintenance, and bus storage. This adverse impact on wildlife habitat would be minor and long term.

Wildlife habitat would be increased by about 2 acres in the long term by rehabilitating one track of the Joyner Ridge trail, the prairie dog pullouts, and the former headquarters, parking, and maintenance facilities. This beneficial effect on wildlife habitat would be minor and long term.

This alternative would result in a net loss of wildlife habitat of about 6 acres, which would be a minor long-term adverse impact.

Invertebrates and small vertebrates can be destroyed by construction or displaced by changes in vegetation resulting from construction. Small animals and birds usually are displaced and disrupted by the development of an area. Most areas that would be developed under alternative 4 already have been disturbed. The adverse impact on invertebrates and small vertebrates would be negligible and short term.

Conclusion: Alternative 4 would result in the loss of approximately 8 acres of wildlife habitat, and 2 acres would be rehabilitated, so the net loss would be about 6 acres. Construction would destroy invertebrates and small vertebrates and probably displace and disrupt small mammals and birds. Overall, implementing alternative 4 would result in minor long-term adverse impacts on wildlife.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Air Quality

The air quality at the Tower would improve because visitors' vehicles would not go there during peak times. The air quality also would be improved because circling the parking lot to find a parking space would become unnecessary. There would be increased bus traffic, but drivers would not be allowed to idle bus engines, and buses would not be queuing because they would be on a schedule. This minor beneficial effect would last approximately four hours per day for 17 weeks each year.

Requiring visitors to use the shuttle bus to get to the Tower at peak times could result in the degradation of air quality because the level of bus activity in the monument could be high. Air quality would be most compromised at the shuttle staging area and at the shuttle stop (now the picnic area, campground, trailer dropoff, and amphitheater) because automobile traffic, parking, and shuttle activity would be added. Shuttles would use the best available practical, low emission technology. The adverse effects on air quality from the shuttle system would be minor and short term.

Air quality would be improved at the shuttle stop in the campground area because fewer vehicles would drive and park there, and wood smoke would be reduced. This minor beneficial effect would be long term.

Construction would cause only temporary, localized impacts on air quality, such as dust and diesel fumes from heavy equipment. This minor adverse effect would be short term.

Conclusion: Establishing a shuttle system would improve the air quality at the Tower and the shuttle stop at the former campground area and degrade it at the shuttle staging area outside the monument during peak times. The monument's air quality would be improved by the absence of wood smoke from campground loop A and the special permit camping area. The overall effect on air quality from alternative 4 at the peak season would be minor short-term adverse changes at the shuttle staging area during peak times.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Threatened, Endangered, and Candidate Species

Removing all automobile pullouts from the prairie dog town (0.2 acre) would disrupt prairie dog activity during construction, a minor short-term negative impact. Restoring these areas to more natural conditions would reduce the interactions between visitors and prairie dogs. It also would reduce stress on the prairie dogs, eliminate their chances of being run over in pullouts, and make it more difficult for visitors to feed them human food. This would be a minor long-term beneficial effect on the prairie dogs.

Widening the trail around the prairie dog town and covering it with gravel would reduce the habitat slightly (0.3 acre) and could lead to stress on individual prairie dogs along the trail edge. Widening would discourage visitors from wandering off the trail, therefore benefiting the prairie dogs. Any displaced prairie dogs probably would move their burrows outside the new trail perimeter. This minor adverse impact on prairie dogs would be long term.

Realigning the main road at the administrative junction would degrade prairie dog habitat on approximately 0.7 acre. This would be a minor long-term adverse impact on prairie dogs.

Conclusion: A net loss of 0.8 acre in prairie dog habitat would be a minor long-term adverse impact on prairie dogs.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wetlands

Removing the headquarters and maintenance facilities and the trailer dropoff area and restoring the wetlands in that area would restore natural and beneficial wetlands values. This beneficial effect would be moderate and long term.

Conclusion: Removing development from the wetlands and restoring natural and beneficial values would result in a long-term moderate beneficial effect.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Floodplains

Natural and Beneficial Floodplain Values. Constructing a shuttle stop would decrease the absorption of water by the soil and occupy the floodplain. This major adverse impact on floodplains would be long term. It would be in conflict with the NPS policy of protecting natural and beneficial floodplain values and avoiding the occupancy of floodplains. If this alternative was selected, a statement of findings for floodplains would be prepared.

Removing the maintenance complex from the 500-year floodplain would increase natural and beneficial values in that area of the floodplain. This minor beneficial effect on floodplains would be long term.

Flooding. Removing 20 of the 50 campground sites would decrease the overnight use of the floodplain, but some of the campground still would be occupied. If a 100-year flood occurred on the Belle Fourche River, the water in the campground would be 2 to 4 feet deep and of moderate velocity. In the past 40 years, two flood events from spring runoff and heavy rain covered the campground with 5 feet of water. Such an occurrence could be caused by heavy rain when the dam is already full or by flooding on one or more tributaries of the Belle Fourche. A breach of the Keyhole Dam would potentially cause a level of flooding that would endanger campers. These conditions would be hazardous to campground occupants; however, there is a convenient escape route to higher ground toward the northwest, and an evacuation plan would be developed in accordance with NPS policy.

The *Crook County Emergency Plan* indicates that, "In the event of a dam breach at Keyhole, it will be approximately 3 hours before floodwaters reach Devils Tower National Monument." However, even though an evacuation plan would be prepared and potential warning from operators of the Keyhole Dam would reduce the risk to campers, these visitors would remain in some danger. Communications might not always be fully comprehended or acted upon. Miscommunications could leave campers at risk in the event of a 100-year flood or breach of the Keyhole Dam. Severe flooding has been infrequent, and the risks are minor to moderate, but flooding could result in major adverse impacts on the visitors involved.

Conclusion: The occupation of the 100-year floodplain by 30 campsites and the replacement of 20 campsites with a shuttle staging area would continue to have major long-term adverse

impacts on natural processes. These effects would be offset only partially by the long-term minor beneficial effect of removing the maintenance complex from the 500-year floodplain. Fewer campsites would remain in the 100-year floodplain. Severe flooding has been infrequent, and risks are minor to moderate, but flooding could result in major adverse impacts on the visitors involved.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Agriculture (including dryland farming) and ranching uses have greatly reduced native prairie plants and animals and led to the alteration and erosion of soils. Wildlife have been affected by being displaced, and habitat has been lost through agricultural uses, animals, and plants. Probably the greatest impact on wildlife at the monument has been the restriction of movement caused by fencing much of the perimeter along the south, east, and west boundaries. Wildlife are also disrupted by development, employees, and visitors.

If the repaving and widening of the road was approved, approximately 1 acre of previously disturbed herbaceous vegetation along the road would be lost. Placing riprap in several locations to reduce the erosion of drainage ditches would result in the loss of 0.01 acre of grassland. Removing and revegetating at least four existing pullouts would result in the establishment of approximately 0.2 acre of additional grassland habitat dominated by native grasses and wildflowers. Small mammals would be displaced and native vegetation removed by these actions.

Developing some private or state lands for tourist-related activities or for residential or other uses could increase runoff and soil compaction and could alter soil regimes and vegetative communities, as well as causing the loss of plants in some areas. Increased development outside the monument would further fragment wildlife habitat and interrupt wildlife habits and movement. Less land would be available for prairie dog habitation. Road kills of rodents, larger mammals, and birds would increase because more development probably would increase traffic. If visitation increased, bringing more traffic, the air quality would be degraded further.

"The black-tailed prairie dog has undergone severe reduction in occupied range and population in Wyoming since settlement and the advent of farming and ranching. Occupied range has been reduced by over 80% from pre-settlement" (Campbell and Clark 1981). "Similar to other parts of the historical range, the major reduction in prairie dog populations probably occurred in the early 1900s when poisoning programs began in earnest"(AZ Game and Fish Dept. 1999).

The implementation of the "Memorandum of Understanding among State Fish and Wildlife Agencies within Black-tailed Prairie Dog Range: Conservation and Management of Black-tailed Prairie Dog in North America" (9 of 11 states) might lead to the development and implementation of comprehensive state plans. These plans would be designed to maintain the broadest distribution and greatest abundance possible within the fiscal realities of the state agencies and cooperating partners.

Cooperative partnerships might be developed with interested individuals and with private, state, tribal, and federal land managers. However, implementing such plans would take several years. For the time being, it is not expected that landowners outside the monument would allow prairie dogs to move onto their land. Therefore, the prairie dog colony at Devils Tower would be unlikely to grow large enough to support ferrets and mountain plover. The population in the monument probably would continue to be small and isolated.

As part of road repaving, wooden posts would be replaced along the road and at pullouts adjacent to the prairie dog colony. This could temporarily displace individual animals but would not be likely to result in mortality. In areas occupied by prairie dogs, the centerline of WY 110 would be shifted north to avoid impacts on numerous burrows adjacent to the southern edge of the road (NPS 2000a).

The construction of the Keyhole Dam has greatly reduced the extent of the floodplain, associated wetlands, and the natural and beneficial values of floodplains and wetlands. At least some wetlands in the area probably have been filled to make more land available for growing crops. Cattle and sheep probably have been allowed to use some wetland and riparian areas in the vicinity of the monument. These practices decrease the area of wetlands and degrade natural and beneficial floodplain values in exchange for benefits to agricultural uses.

NPS structures and visitor uses in wetland and floodplain areas contribute to the loss of natural and beneficial values. Removing the headquarters building, the maintenance facility, and the trailer dropoff area and restoring wetlands in those areas would result in a moderate long-term beneficial effect on wetlands. Replacing 20 campsites in the 100-year floodplain with a less-permeable shuttle staging area would be a moderate adverse impact. The presence of the dam would result in major long-term reductions in area and would reduce beneficial values in floodplains and wetlands downstream of the dam on the Belle Fourche River. Repaving the main monument road would not result in any effect on any floodplain or wetland. Further developments in floodplains and wetlands for residential, agricultural, or commercial uses would decrease the area on which natural and beneficial wetland and floodplain values would be preserved.

Overall, the above past, present, and future actions, in conjunction with the impacts of alternative 4, would result in major long-term adverse impacts on natural resources, including soils, vegetation, wildlife, prairie dogs, wetlands, and floodplains. Most of the impacts would result from previous actions, including agriculture, ranching, and dam construction. The actions of alternative 4 would contribute a very small increment to the overall cumulative impact.

CULTURAL RESOURCES

Ethnographic Resources

The viewshed in the Tower area would be improved through converting the paved upper parking area at the Tower to a pedestrian plaza, upgrading the gravel-surfaced parking area at the Tower, removing the prairie dog town pullouts and the headquarters and maintenance facilities, and rehabilitating trails and disturbed areas. This would leave fewer traffic-related visual intrusions on culturally sensitive areas. Although the shuttles might be noisier than automobiles, the traffic noise would be of shorter duration, and there would be fewer cars at the base of the Tower. Requiring visitors to use the shuttle or other nonmotorized means to reach the Tower at peak times would reduce crowding at the Tower. These actions would improve the ethnographic context of the area, offer more opportunities for solitude and quiet for traditional uses, and benefit American Indian tribes that might want to conduct religious activities at the Tower. This long-term beneficial effect on ethnographic resources would be moderate.

Reducing the concentrations of people in the special permit zone (northwest corner of the monument) through permitting would give more protection to culturally sensitive areas and increase the opportunity for solitude in a larger area than in alternative 1. This beneficial effect on traditional cultural practices would be negligible and long term. Because most American Indian religious practitioners come as individuals or in very small groups, the permitting requirements would result in a negligible long-term adverse impact on their traditional cultural practices. Larger groups already are required to obtain permits; therefore, requiring groups of six or more to register with a ranger would continue

an existing practice. The long-term adverse effect on ethnographic resources would be negligible.

Not allowing visitors on the north and west roads would reduce visual and auditory intrusions in this culturally sensitive area and increase the sense of solitude. This beneficial effect would be minor and long term. Closing two little-used roads to visitor use would not impede access to traditional areas because the main road would remain open. This long-term adverse impact would be negligible.

Adding a spur trail between the Red Beds and Joyner Ridge trails could bring more visitors into an area that is now little used, which offers great solitude for religious ceremonies. Funneling more visitors into the area could change the perception of solitude. This adverse impact would be moderate and long term.

Discontinuing the use of the special permit camping area could inconvenience up to two parties of American Indians per year. No groups have used the campground since 1999. This would be a minor long-term adverse impact on American Indians who might want to camp there.

Visual and auditory intrusions would occur in the vicinity of all construction and rehabilitation activities. This minor adverse impact would be short term.

Conclusion: Construction would have a minor short-term adverse impact on ethnographic resources. Some adverse impacts also would result from adding high visibility visitor use areas and from adding a spur trail between the Red Beds and Joyner Ridge trails. However, on balance, alternative 4 would result in a moderate beneficial effect on ethnographic resources in the long term. This is because removing the paved upper parking area, creating a pedestrian plaza, moving the main parking area farther away from the base of the Tower, and eliminating the prairie dog town pullouts would benefit ethnographic resources, as would rehabilitating trails, disturbed areas, and 20 sites of the developed campground. These actions potentially would allow fewer visitors at the base of the Tower at one time. Ethnographic resources also would benefit from reducing the concentrations of people, establishing a shuttle system, eliminating visitor access to the north road, and eliminating the west road.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Although past actions have affected ethnographic resources, no ongoing or future actions such as repaving the main road would have a perceptible impact on them. The actions of alternative 4 would not add appreciably to cumulative impacts.

Historic Resources

Converting the paved parking area at the base of the Tower to a pedestrian plaza would partially restore the setting of the historic district listed on the national register, improve its integrity, and remove some visitor intrusions. Upgrading the graveled parking area for use as the principal parking area would move primary parking farther from the historic district. This beneficial effect would be moderate and long term.

Removing the prairie dog town pullouts would restore the original alignment of the national register-listed main road in that area. This beneficial effect on historic resources would be minor and long term.

Operating a shuttle system during peak visitation periods and scheduling tour bus visits to the Tower would result in fewer traffic-related visual intrusions on culturally sensitive areas. This

moderate long-term beneficial effect would occur during peak use periods.

Removing the headquarters and maintenance area from the monument would eliminate visual intrusions on the historic road corridor and improve the viewshed from the Tower, a culturally sensitive area. This moderate beneficial effect on the historic road corridor would be long term.

Construction activities would cause visual and auditory intrusions. These short-term adverse impacts would be minor.

Conclusion: Visual and auditory intrusions from construction would result in short-term adverse impacts on historic resources. Long-term beneficial effects on historic resources would result from converting the paved parking area at the base of the Tower to a pedestrian plaza, paving the graveled parking lot, operating a shuttle during peak visitation periods, and scheduling tour bus visits to the Tower.

Realigning the main road at the administrative junction and the entrance road to accommodate the shuttle system could have adverse impacts on historic resources.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: The number and integrity of CCC-made roadway features (such as rock walls and culvert headwalls) would continue to be gradually reduced by traffic, erosion, natural processes, and highway construction. With continuing aging of these 1930s structures, there is the potential for accelerated deterioration from natural causes, which could result in the loss of structural integrity and original materials.

Repaving the main monument road would not affect the historic buildings. Burying the culvert headwall would have a minor long-term adverse impact on one roadway-contributing feature. A moderate long-term beneficial effect would result from rehabilitating the roadway. Traffic, natural processes, and new construction could damage or destroy CCC roadway structures, resulting in moderate adverse cumulative impacts in the long term.

Overall, the above past, present, and future actions, in conjunction with the impacts of this alternative, would result in long-term minor to moderate adverse impacts on historic resources. Most of these impacts would result from past actions and processes, including traffic, erosion, natural processes, and highway construction. The impacts of alternative 4 would contribute a very small increment to the overall cumulative impact.

Section 106 Summary: This summary was prepared with the use of the definitions of section 106 of the National Historic Preservation Act.

Under the regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) addressing the criteria of effect and adverse effect, the National Park Service finds that converting upper Tower parking area to a pedestrian plaza and moving the principal parking area farther away would have an effect that would not be adverse.

Because the main road has been realigned in the past, realigning it in this alternative would have an effect that would not be adverse.

Continuing the requirement for permits to use the northwest corner of the monument would have an effect on ethnographic resources that would not be adverse.

The actions of alternative 4, taken together, would have an effect on cultural resources that would not be adverse.

VISITOR EXPERIENCE

Visitors' Experience of Monument Resources

As in the preferred alternative, managing visitation levels and requiring visitors to use a shuttle system during peak times would decrease noise, crowding, and disruption in the Tower area. When the shuttle was operating, there would be a change from constant traffic noise to louder but less frequent noise events. Visitors would be free of the frustrations of searching for parking places and competing with large vehicles for parking and circulation space. Many would enjoy the opportunity to experience the scenery without the pressures of driving. Adding restrooms at the shuttle staging area would decrease visitor discomfort and frustration at the inadequacy of these facilities in the Tower area. Over time, most visitors would benefit from the overall reduction in crowding and traffic. This would be a major long-term beneficial effect on the visitor experience, especially at peak times.

Replacing the existing paved parking area with a more natural pedestrian plaza and parking vehicles in the existing overflow parking area (farther from the base of the Tower) would make the setting for viewing the Tower quieter and more contemplative. For many visitors, this setting would be much more commensurate with the Tower's meaning and significance. Views from the Tower and areas at its base would be enhanced by the reduction of pavement near the Tower and by vegetative screening of parked vehicles; however, paving the existing overflow parking area could have a minor adverse effect on the view in the long term. Overall, these changes would result in major long-term beneficial effects on visitors, especially those who came during peak use times, because they would affect most visitors' experiences of the monument's prime resources.

Construction activities to modify the Tower area facilities, remove the administrative and maintenance facilities, redesign the road intersection, and remove the parking pullouts at the prairie dog town would result in short-term adverse impacts. The visitor experience would be affected by noise from construction vehicles and equipment, visual intrusions from ground and vegetation disturbance, more traffic, the presence of large construction vehicles, and general disruption of circulation. These effects, although short term, could be moderate to major because they would affect many visitors and would occur in the monument's prime resource areas. These impacts would be particularly severe for visitors who might have only one opportunity to visit Devils Tower and whose experiences were degraded by construction activities.

At a staging area for the shuttle system outside the monument boundaries, visitors would have an opportunity to transition from driving the highway to entering the national monument. Minor confusion could result from visitor uncertainty about the relationship between the staging area and the actual entrance to the monument. New development would change the character of the existing entrance and modify the rural character of the surrounding area. Visitors might view these changes as beneficial or adverse, but they would be considered long-term minor effects because they would not affect experiences in prime resource areas. Depending on the location, design, and landscaping of the staging area, the development could be visible from the Tower or from the trails. An intrusive facility could cause a moderate to major adverse impact on views, especially if the experience in the Tower area was negatively affected.

New development at the shuttle stop near the campground would be visible from the Tower and the trails. The adverse impacts on the viewshed from this development would be minor. Using design and materials that would blend with the scene and maximizing vegetative screening could mitigate some of this impact. Noise would increase in the general area, and some animals and birds would be displaced, reducing visitors' opportunities for viewing

wildlife. Because these impacts would not occur in prime resource areas and the development would be small, the long-term adverse impacts would be minor.

Providing new access to the prairie dog town and improving area trails would enhance most visitors' experience of seeing the prairie dogs. People could watch the prairie dogs in a quieter setting free from the distraction of traffic congestion and from the safety concerns present at the existing parking pullouts along the main road. When the shuttle was not operating, some visitors might be frustrated because they would want to stop along the road at the first area where prairie dogs can be seen, but overall the effect on visitors from these changes would be long term and beneficial because most visitors value a chance to see wildlife. Removing the pullouts along the road, thus eliminating parked vehicles along the road, would result in a long-term beneficial effect on the viewshed from the Tower and the trails. The effect would be minor, because the viewshed still would be impaired by vehicles moving along the road.

Reducing the available campsites in the monument from 50 to 30 would result in some visitors being unable to spend a night in the national monument. Only a small number of visitors use the campground, but those who do value the quiet, shady character of the area. Camping is not fundamental to the mission of the monument, and other campgrounds are readily available outside the monument. For these reasons, and because a relatively small number of visitors would be affected, the loss of 20 camping spaces would be a negligible to minor long-term adverse effect.

As in the preferred alternative, managing monument use in the northwest corner to protect the quiet, contemplative character of the visitor experience would result in some long term beneficial effects, as would closing two road segments to visitor use. The viewshed would be improved, and vehicle traffic would disrupt natural sounds only infrequently. Although only a small percentage of visitors would be affected directly by these changes, continuing to offer opportunities for solitude and quieter experiences would be a long-term benefit for visitors seeking these kinds of experiences. Because the area involved would be smaller than in alternative 2, this beneficial effect would be moderate. Reducing road access could make access more difficult for some visitors, but this would be a minor impact because of the relatively short distances from the remaining road and the small number of visitors that would be affected.

Adding a new trail spur to connect the Joyner Ridge and Red Beds trails would enhance visitor opportunities for solitude and wildlife viewing. Because only a small numbers of visitors would be affected, this long-term beneficial effect would be minor.

Eliminating the special permit camping area would increase the overall natural setting. Since the disruption caused by the existing use and condition of the area would be minor, this change would result in a minor effect. The special permit camping area, although not heavily used and not fundamental to the monument's mission, offers expanded opportunities for group recreation. However, because the number of visitors affected would be small, eliminating camping in this area would result in a negligible long-term adverse impact on groups.

Relocating the administrative headquarters and maintenance facilities would improve the viewshed from the Tower and the trails and along the main road. Removing these facilities from their present location and rehabilitating the area to a natural appearance would result in a long-term major beneficial effect on most visitors because the scenery along the road would be improved. The minor impacts resulting from visitor confusion between the administrative headquarters and the visitor center would be eliminated.

Access and Freedom to Go at One's Own Pace

As in alternative 3, visitors would not be free to move around the monument at their own pace when the shuttle system was operating, and the

shuttle might increase the cost of visiting the monument. Some visitors might choose not to visit Devils Tower because they would prefer not to use the shuttle. People carrying gear for picnics or other activities would be inconvenienced by the need to transfer their belongings from their cars to the shuttle. The shuttle would also change visitors' experience from one of family or peer group to sharing at least part of the experience with people unknown to them. Overall, the shuttle system would result in a long-term major adverse impact on visitors who place high value on spontaneity, privacy, and independence. This impact would be mitigated somewhat because the shuttle would operate only during the peak use season, and even at peak times there would be morning and evening hours when shuttle use would not be required.

The shuttle system would increase some visitor options for different experiences. For example, trails could be hiked one-way since visitors could use the shuttle to trailheads or to return to their cars after the hike. Based on current use patterns, it appears that a small percentage of visitors would be likely to take advantage of these opportunities; therefore, the long-term beneficial effect would be minor to moderate.

Removing visitor parking from the existing paved area would slightly increase the walking distance to visitor facilities and the Tower's base. This could particularly affect visitors with impaired mobility. Because the distance would not be great and design could minimize the grade, this long-term impact would be minor. During times when the shuttle was operating, visitors might be dropped off closer to the Tower than the parking spaces many are able to find at present.

Redesigning the approach would make access to the Tower trail easier. Because the current approach is steep, redesign could improve access to the base of the Tower for a significant number of visitors, resulting in a long-term moderate to major beneficial effect.

Reducing road access in the northwest corner of the monument and requiring use permits would increase the restrictions on freedom of movement. Because only a small number of visitors would be affected, this long-term impact would be minor. However, for visitors with impaired mobility, the impact would be moderate because of the loss of vehicle access to some parts of the monument.

Visitors no longer would be inconvenienced by the need to drop off towed vehicles before continuing along the road to the Tower area. Because of the small number of people affected, this long-term beneficial effect would be minor.

Access to Orientation and Interpretation

Opportunities for ranger contact and for more effective dissemination of interpretation and information would be greatly enhanced by the modifications in the Tower area, the reduced crowding, and the improvements to the prairie dog viewing area. Visitors would be less distracted in the visitor center, and more space in the pedestrian plaza and at the prairie dog town would allow for better, quieter, less disrupted interpretive programs. There would be opportunities for new programs, and more in-depth treatment of some themes would be available at the shuttle staging area, an improvement over the existing facilities. Visitors would have time to absorb more information while waiting for the shuttle, and more interpretation could be offered on the shuttle itself.

More effective in-depth interpretation would result in greater visitor understanding of the monument's significance. Better orientation information would help visitors make the best use of their time. Long-term improvements over the current information and interpretive programs (which are hampered by general crowding and inadequate facilities) would benefit most visitors; this would be a major beneficial effect.

Visitor Safety

Reducing traffic at the Tower area and along the main road and removing the parking pullouts at the prairie dog town would decrease the poten-

tial for vehicle and vehicle-pedestrian accidents. Realigning the intersection between the main road and the access road to the new shuttle staging area would facilitate the safe movement of shuttle buses and visitor vehicles. Although vehicle accidents have been infrequent, reducing the risks would be a moderate long-term beneficial effect because the results of an accident could be major to the people involved.

Cumulative Effects: Although past actions have affected the visitor experience, no ongoing or future actions such as repaving the main road would have a perceptible impact on it. The actions of alternative 4 would not add appreciably to cumulative impacts.

Conclusion: Managing visitation levels and establishing a shuttle system for use at peak times would decrease crowding, noise, and disruption in the Tower area. The use levels probably would be lower than at present during peak use times, increasing somewhat at off-peak times. Many visitors would be able to experience the monument's scenery without the pressures of driving. At a shuttle staging area outside the monument boundaries, visitors could transition from driving the highway to entering the national monument. Over time, most visitors would benefit from the overall reduction in crowding and traffic; this beneficial effect on the visitor experience would be major, especially during peak seasons. Redesigning the access to the Tower trail would facilitate movement to the base of the Tower for a significant number of visitors; therefore, this long-term beneficial effect would be moderate to major.

Opportunities for ranger contact and more effective dissemination of interpretation and information would be greatly enhanced by the modifications in the Tower area, reduced crowding, and the improvements in the prairie dog viewing area. There would be more opportunities for new programs, and more in-depth treatment of some themes would be available at the shuttle staging area and on the shuttle itself. Overall, these long-term beneficial effects would be major.

Visitors would not be free to move around the monument at their own pace when the shuttle system was operating, and the shuttle might increase the cost of visiting the monument. Some visitors might choose not to visit Devils Tower because they would prefer not to use the shuttle. Overall, the shuttle system would result in a long-term major adverse impact on visitors who place high value on spontaneity, privacy, and independence. This impact would be mitigated somewhat because the shuttle would operate only in the peak use season, and even during those times there would be morning and evening hours when shuttle use would not be required.

Reducing the available campsites in the monument from 50 to 30 would result in some visitors being unable to spend a night in the national monument. Only a small number of visitors use the campground, but those who do value the quiet, shady character of the area. Because a relatively small number of visitors would be affected, the loss of 20 campsites would be a long term minor to moderate beneficial effect.

SOCIOECONOMIC RESOURCES

Businesses and Neighbors

The location of the Trading Post and KOA adjacent to the monument would continue to give those businesses a distinct competitive advantage over commercial outlets farther from the entrance. This would be a moderate beneficial long-term effect for those businesses.

As described before, a transportation study (Robert Peccia & Associates 1999) indicates that 34% of the vehicles entering Devils Tower National Monument first enter the retail area immediately outside the entrance, 41% of the vehicles leaving enter the retail area immediately outside the entrance. Anecdotal reports from these businesses indicate that lines of traffic block monument visitors from entering the businesses. Placing another entrance station outside the monument would mean that there would be no waiting line of vehicles at the entrance during peak times because most visitors would enter on

shuttles from the staging area. Without data on how many visitors want to stop at the retail area, and assuming that the same vehicles are not stopping upon entrance and exit, it appears that about 75% of vehicles manage to stop at the retail area. Assuming that all 25% of the vehicles that do not stop contain visitors who would like to stop but are prevented from doing so by traffic, adding an entrance station at the shuttle staging area outside the monument boundary would allow all these visitors to stop. This long-term beneficial effect would be minor.

Eliminating 20 campsites to make room for a paved parking area, a shuttle stop, and restrooms would not cause a serious problem because campers could camp in the surrounding area. Eliminating 40% of the monument's campsites would not affect campers throughout most of the camping season; however, at peak times the remaining 30 monument campsites in loop B might not serve all prospective campers. Neighboring campgrounds have enough capacity for the campers who otherwise would have stayed in the national monument. This would be a minor short-term adverse impact on some campers during peak season. The KOA campground just outside the Devils Tower entrance would be the most likely beneficiary of the new business; thus, there would be a minor beneficial long-term effect on revenues at the KOA campground if campers displaced from Devils Tower campground chose to camp there.

People looking for the least expensive camping option might take advantage of free camping at Tower View or on nearby Forest Service property. Campers who camped free might buy food or other items. This would result in a minor beneficial long-term effect on local business.

The overall number of people camping in the Devils Tower area would not decrease because monument campsites were reduced. Consequently, overall visitor spending in the region would not decline. For purposed of example, the KOA campground charges roughly $25 per night for camping. At this rate, over the course of the camping season, revenues from camping at private campgrounds would increase by $12,500 per year. This would result in a minor beneficial long-term effect on local businesses during camping season.

Conclusion: Assuming that all 25% of the vehicles that do not stop at businesses adjacent to the monument contain visitors who would like to stop but are prevented from doing so by traffic, adding an entrance station at the shuttle staging area would allow all these visitors to stop. This minor beneficial effect would be long term.

Privately owned campgrounds in the region could potentially gain up to $12,500 per year in new business. This would be a minor, intermittent beneficial effect on local businesses in the long term.

Local and Regional Economy

Local businesses could gain revenue of about $12,500 per year. Revenues from camping in the area would increase by about $2,500 per year, a minor long-term beneficial effect on the local and regional economy. Because revenue from camping in the monument is not taxable, as is revenue from camping outside the monument, alternative 4 would result in an increase of approximately $12,500 in taxable revenues. This would be a minor beneficial long-term impact on local taxing authorities.

Establishing a shuttle system to be operated in peak use periods would require that the National Park Service contract with a shuttle operator. This would increase the potential income revenue for the area, a minor beneficial long-term effect on the local economy.

A report prepared for the National Park Service by BRW (Byrne 2000) indicates that between 5 and 20 shuttle drivers would be required. These would be part-time seasonal jobs. Depending on the shuttle option selected, the total hours of operation would range from 2,318 hours to 10,046 hours. The BRW report also shows that a maintenance staff of two to five persons would be required to service the shuttle vehicles under

various options. Maintenance would not be required year-round, but it would extend beyond the 17-week period in which the shuttle system would operate. An administrative staff of one to four people would be needed to manage the system for the same period.

Data in the *1998 Occupational Employment Statistics Wage Survey* (Wyo. Dept. of Employment 1998) show that auto repair, services, and parking jobs in the Devils Tower region pay an hourly mean wage of $8.99 for drivers and maintenance workers and of $23.79 for managers. On the basis of projected hours of operation, the total seasonal wages paid to part-time shuttle drivers would range from $20,839 to $90,314. Maintenance wages would range from $16,542 (shared by two persons) to $41,354 (shared by five persons) per year of shuttle operation. Managers' wages would total from $21,887 (for one manager) to $87,547 (for four) per year of shuttle operation.

Shuttle system employees would add to the food, fuel, and retail expenditures made at commercial enterprises near the monument. Fuel expenditures for the shuttles would be made locally, even if the fuel was obtained from Park Service fuel tanks inside the monument. This spending would be a long-term minor benefit to retailers immediately outside the Devils Tower National Monument entrance and in nearby towns. Local jurisdictions would collect sales taxes collected on these expenditures, a minor long-term beneficial effect.

According to an NPS cost estimate (under an option requiring only five buses) the cost of purchasing shuttle buses would be $1,240,000. These vehicles might or might not be purchased in the region. If they were bought in the region, the estimated sales tax revenue (with a 5% tax rate) would be $62,000, a minor short-term beneficial effect on Crook County.

Crook County would also receive certain minimal sales and use tax revenues from the shuttle service provider, including a $60 fee for a sales tax license as well as an operating fee of $50 per vehicle per year. This beneficial effect on Crook County would be minor and long term.

The new restroom facilities included in this alternative would not affect local sewage and water systems because water and wastewater systems would be developed in the monument.

Construction impacts would be felt primarily while construction was taking place, which would vary by project. Multiple projects could occur simultaneously. The National Park Service's cost estimate for the construction work of alternative 4 is roughly $3.8 million (excluding the cost of the shuttle vehicles), of which approximately 50% would go toward labor, with the rest going for materials and services, according to the rule-of-thumb estimates for the construction industry. This translates into the equivalent of 61 one-year construction jobs over the duration of the various construction periods. (The construction projects of this alternative, which could last from a week to more than a year, could include widening or narrowing monument roads, converting roads to hiking trails, converting the upper parking lot to a pedestrian plaza, preparing new exhibits and orientation space, and constructing shuttle system facilities. The Devils Tower staff might complete some projects, but private contractors would be hired for most of the work.

Data in the *1998 Occupational Employment Statistics Wage Survey* (Wyo. Dept. of Employment 1998) show that construction jobs in the Devils Tower region pay an hourly mean wage of $12.41. The equivalent of 61 one-year jobs would be created during the construction period, with at total payroll of roughly $1.9 million. The construction projects would be short term and would amount to only a small percentage of the regional economy's jobs and earnings. According to the Wyoming Department of Employment, approximately 2,100 of the 26,500-person labor force in Crook, Campbell, and Weston Counties were employed in the construction industry during the third quarter of 1999 (1,900 of them in Campbell County). The creation of 61 one-year construction jobs at Devils Tower would represent a small portion of the 2,100

construction jobs in the area. Therefore, the construction at Devils Tower under alternative 4 would have a minor short-term beneficial effect on the region's overall employment.

Short-term construction also would have certain spinoff effects. Construction laborers would add to the food, fuel, and possibly lodging expenditures made in the region for the duration of the construction period. This would directly benefit retailers immediately outside the Devils Tower National Monument entrance and in nearby towns. This minor beneficial effect would be short term.

Sales taxes collected on the expenditures of construction laborers would benefit Crook County. According to the Crook County Treasurer's Office, Crook County's sales tax rate is 5%. Assuming that construction materials purchased by contractors would not be subject to the National Park Service's tax-exempt status, local jurisdictions would have tax revenues on $1.35 million in purchases of construction materials. The collection of about $67,500 in tax revenues would be a moderate short-term beneficial effect on county sales tax revenues. Construction in Crook County outside city limits is not subject to a permitting fee. There would be a minor beneficial short-term effect on Crook County from sales tax collected on the expenditures of construction laborers.

Construction materials (estimated at $1.9 million) could be purchased in the region, benefiting regional suppliers. This beneficial effect would be minor and short term.

Over roughly three years, money spent on construction would be circulated throughout the regional economy. According to data from the U. S., Bureau of Economic Analysis, the estimated amount of income generated by $3.8 million of new construction would add $2,090,000 to $2,774,000 throughout the state economy (above and beyond the $3.8 million in construction). The range of spinoff income reflects the different BEA multipliers for new construction (1.5532) or maintenance and repair construction (1.7318) in Wyoming. This would be a minor long-term (approximately 3-year), beneficial effect on the regional economy.

Conclusion: Converting the 20-site campground loop A to other uses would increase camping revenues to area businesses by about $2,500 per year, a long-term minor beneficial effect on the regional economy. Because revenue from camping in the monument is not taxable, as is revenue from camping outside the monument, alternative 4 would result in an increase of approximately $12,500 in taxable revenues. This would be a minor beneficial long-term effect on local taxing authorities.

Operating a shuttle service would have a minor beneficial effect on employment opportunities and on the local and regional economy in the long term. There also would be indirect effects on local businesses and tax revenues. Between 8 and 29 jobs could be created, with a total annual payroll of between $60,000 and $220,000. Overall, the shuttle service would contribute only a small percentage of the regional economy's jobs and earnings.

The short-term construction projects of alternative 4 would have a beneficial effect on employment opportunities and on the local and regional economy, including indirect effects on local businesses and tax revenues. The equivalent of 61 one-year jobs would be created during the construction period, with a total payroll of roughly $1.9 million. The total benefit to Wyoming's economy from the proposed construction would be up to $6,574,000. The short-term construction projects would contribute only a small percentage of the regional economy's jobs and earnings. The creation of 61 one-year construction jobs at Devils Tower would represent a small portion of the 2,100 construction jobs in the area; therefore, construction at Devils Tower would have a minor short-term beneficial effect on the overall regional employment, businesses, and the local and regional economy.

Over roughly three years, the $3.8 million spent on construction would circulate throughout the regional economy to generate an additional total of $2,090,000 to $2,774,000 (above and beyond

the $3.8 million in construction). This would be a minor long-term (approximately 3-year) beneficial effect on the regional economy.

Cumulative Effects: Although past actions have impacted socioeconomic resources, no ongoing or future actions such as repaving the main road would have a perceptible impact on them. The actions of alternative 4 would not add appreciably to cumulative impacts.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts that would result from alternative 4. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are described in the foregoing analysis.

Natural Resources

The occupation of the 100-year floodplain by 30 campsites and the replacement of 20 campsites with a shuttle staging area would continue to have major long-term adverse impacts on natural processes. These effects would be offset only partially by the long-term minor beneficial effect of removing the maintenance complex from the 500-year floodplain. Fewer campsites would remain in the 100-year floodplain. Severe flooding has been infrequent, and risks are minor to moderate, but flooding could result in major adverse impacts on the visitors involved.

Cultural Resources

Adding a spur trail between the Red Beds and Joyner Ridge trails could bring more visitors into a currently little used area that offers great solitude for religious ceremonies. Funneling more visitors into the area could change the perception of solitude. This moderate adverse impact would be long term.

Visitor Experience

Modifying the Tower facilities, moving the administrative and maintenance facilities to a location outside the boundaries, redesigning the road intersection, and removing the parking pullouts at the prairie dog town would result in short-term adverse impacts from construction activities. The visitor experience would be affected by noise from construction vehicles and equipment, visual intrusions from ground and vegetation disturbance, more traffic, the presence of large construction vehicles, and general disruption of circulation and activities. These effects, although short term, could be moderate to major because they would affect many visitors and would take place in the prime resource areas. The impacts would be particularly severe for visitors who might have only one opportunity to visit the monument and whose experiences were degraded by construction activities.

At a shuttle staging area outside monument boundaries, visitors could transition from driving the highway to entering the national monument. Minor confusion could result from visitor uncertainty about the relationship between the staging area and the actual entrance to the monument. New development would change the character of the existing entrance and modify the rural character of the surrounding area. Visitors might view these changes as beneficial or adverse, but the impacts would be considered long-term and minor because they would not affect experiences in prime resource areas. Depending on the location, design, and landscaping of the staging area, the development could be visible from the Tower or from the trails. An intrusive facility could have a moderate to major adverse impact on views, especially if the experience in the Tower area was negatively affected.

As in alternative 3, visitors would not be free to move around the monument at their own pace when the shuttle system was operating, and the shuttle might increase the cost of visiting the monument. Some visitors might choose not to visit Devils Tower because they would prefer not to use the shuttle. People carrying supplies

for picnics or other activities would be inconvenienced by the need to transfer their belongings from their cars to the shuttle. The shuttle would also change visitors' experience from one of family or peer group to sharing at least part of the experience with people unknown to them. In total, the shuttle system would result in a long-term major adverse impact on visitors who place high value on spontaneity, privacy, and independence. This impact would be mitigated somewhat because the shuttle would operate only during the peak use season, and even at peak times there would be morning and evening hours when shuttle use would not be required.

Reducing road access in the northwest corner of the monument and requiring use permits would increase the restrictions on freedom of movement. Because of the small number of visitors affected, this long-term impact would be minor. However, for visitors with impaired mobility, the effect would be moderate because of the loss of vehicle access to parts of the area.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Some regrading of the graveled parking area at the base of the Tower could result in the loss of a small part of the natural soil profile on less than 1 acre. This loss would be permanent and irreversible.

No selection has been made of a site outside the monument that would be used for staging and other facilities. About 5 acres would be needed. If an undisturbed site was chosen, up to 5 acres of the natural soil profile could be disturbed by construction. This adverse impact on soils would be minor and long term.

Severe flooding has been infrequent, and the risks are minor to moderate; however, flooding could result in major adverse impacts on the visitors involved. Any loss of life would be irreversible.

RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

In alternative 4, about 10 acres of natural resource areas in the monument and 5 acres outside its boundaries would be disturbed in the short term by construction. There would be no net long-term increase in hardened surfaces in the monument, but hardened surfaces would be added to 5 acres outside the monument. For American Indians and other visitors, the short-term visual intrusions from demolition, construction, and rehabilitation would give way to long-term improvements in the historic setting of the national register-listed historic district at the base of the Tower and improved views from the Tower.

Reducing visitor and traffic congestion at the base of the Tower by using a shuttle system at peak times would cause a major long-term improvement in the visitor experience. Locating the shuttle staging area outside the monument would mean that land for parking could be expanded without enlarging the development footprint. A long-term loss of 20 campsites would result from shuttle staging and visitor parking. This course of action would remove two-thirds of the overnight visitor use from the floodplain, replacing it with daytime infrastructure and more daytime visitor use. Natural and cultural resource values at the Tower would be improved, but those values would be diminished in the campground, the picnic area, and the trailer dropoff area.

Visitors would not have the option of driving to the base of the Tower at peak use times unless there were special circumstances; this would represent a loss of some freedom. However, more interpretation and information would be available at the staging area and on the shuttle en route to the Tower. There would be a long-term improvement of air quality and natural sound in the monument during peak times. If visitors changed their visits from peak to off-peak times so that they could avoid using the shuttle, there might be a minor long-term degradation of air quality and natural sound during off-peak times.

IMPAIRMENT

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

EFFECTS OF ALTERNATIVE 5

NATURAL RESOURCES

Soils

Some regrading and possible construction of retaining walls would be necessary for enlarging the lower parking area at the base of the Tower and for widening Joyner Ridge Road and the main road through the prairie dog town. A small part of the natural soil profile could be lost on less than 1 acre. This would be a moderate adverse long-term impact.

About 5 acres of soils would be subjected to short-term disturbance by the actions of alternative 5. Some areas that would be affected have been disturbed previously. Erosion would be accelerated at least temporarily on sites where soils were disturbed until drainage structures were fully operational and vegetation had recovered. This impact would result from enlarging the parking area at the Tower, constructing a comfort station, widening and paving Joyner Ridge Road, adding parking for 10 cars at the Joyner Ridge trailhead, widening the prairie dog town trail, , widening the main road at the prairie dog town to allow parking on both sides, and expanding the headquarters facility.

To mitigate the disturbance, construction activity would be restricted to the minimum area needed, and topsoil would be retained and replaced where possible to conserve available organic matter. To minimize the soil erosion created by foot traffic, most developments would be constructed where the slopes are less than 15%, trails would be paved in areas where heavy foot traffic was expected, and visitors would be encouraged to stay on maintained trails. In addition, special design methods would be used in areas with high slopes and easily eroded soils. With mitigation as described, the adverse effects on soils from this alternative would be minor and short term.

The net increase in hardened surfaces (including gravel) would be about 2 acres. This would result from building a comfort station and increasing paved parking at the Tower, expanding the headquarters, widening Joyner Ridge Road, enlarging trailhead parking, and widening prairie dog town trail and widening the road that leads through the prairie dog town to allow parking on both sides. In areas with hardened surfaces, the direct inflow of water to soil would be partially or totally eliminated, and precipitation would be collected and diverted to natural drainages. Runoff not collected and diverted to natural drainages would pour out onto adjacent areas, increasing the local soil moisture regime. More runoff in these areas would result in localized increases in erosion, changes in soil nutrient transport, and changes in the natural composition of vegetation.

Altered vegetative composition would create slight changes in soil chemistry. Some of these impacts have already occurred in areas that have been disturbed. The adverse effects on soil erosion, soil nutrient transport, and vegetative composition from hardened surfaces would be moderate and long term, and much of it would occur in the prime resource area near the Tower.

Conclusion: About 1 acre of natural soil profile would be lost under alternative 5. Despite efforts to prevent soil erosion, some soil probably would be eroded on about 5 acres disturbed by construction. About 2 more acres of soil would be covered with hardened surface, and none would be rehabilitated. Implementing alternative 5 would result in long-term moderate adverse impacts on soils.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Vegetation

About 3 acres of vegetation would be lost from enlarging the parking area at the Tower, widening and improving Joyner Ridge Road from the intersection with the main road to the Joyner Ridge trailhead, widening the prairie dog town trail, placing paved parking areas on both sides of the road through the prairie dog town, and enlarging the monument headquarters. This long-term adverse impact on vegetation would be minor.

Clearing some vegetation during construction could increase the relative abundance of species that invade disturbed areas. Increased erosion at these area could expose root systems and lead to the subsequent death of more mesic plants (those requiring a moderate amount of water). This adverse impact on previously disturbed vegetation would be minor and long term.

As mitigation, topsoil would be scraped off and set aside before construction began. It subsequently would be replaced and reseeded with seeds of native species gathered in the monument or with seeds gathered in the monument and propagated elsewhere to allow more rapid recovery of native vegetation and to minimize the encroachment of invading species. During the recovery period, the artificially seeded or replanted native vegetation would not be identical in composition to vegetation in adjacent areas. A reduction in the organic content of the soil would cause a slight change in species composition for several years. This adverse impact on previously-disturbed vegetation would be minor and long term.

Conclusion: About 3 acres of disturbed vegetation would be lost under alternative 5, and none of the areas would be revegetated. Clearing some vegetation during construction could increase the relative abundance of species that invade disturbed areas. Increased erosion at cleared areas could expose root systems and lead to the death of more mesic plants (those needing a moderate amount of water). Overall, implementing alternative 5 would result in minor long-term adverse impacts on vegetation

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wildlife

About 3 acres of wildlife habitat in the monument would be lost from enlarging the lower parking area at the Tower, widening and improving Joyner Ridge Road from the intersection with the main road to the Joyner Ridge trail access, widening the trail through the prairie dog town, placing paved parking areas on both sides of the road through the prairie dog town, and enlarging the monument headquarters. This adverse impact on wildlife habitat would be minor and long term.

A net loss of about 3 acres of wildlife habitat would result from implementing alternative 5. This adverse impact would be minor and long term.

Invertebrates and small vertebrates can be destroyed by construction or displaced by changes in vegetation resulting from construction. Small mammals and birds usually are displaced and disrupted by the development of an area. Some areas that would be developed under alternative 5 have been disturbed already. This negligible adverse impact on invertebrates and small vertebrates would be short term.

Conclusion: Alternative 5 would result in the loss of approximately 3 acres of wildlife habitat. Construction would destroy invertebrates and small vertebrates and probably displace and disrupt small mammals and birds. Overall, alternative 5 would cause minor long-term adverse impacts on wildlife.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Air Quality

During peak visitation periods, the monument's air quality would be further degraded by greater numbers of vehicles at the base of the Tower. The impacts would be greatest during the peak visitor season. Continued degradation of the air quality might result from tour buses idling their engines while parked near the Tower. These adverse impacts on air quality would be negligible and long term.

Construction would cause only temporary, localized impacts on air quality, such as dust and diesel fumes from heavy equipment. This negligible adverse impact would be short term.

Conclusion: Compared to alternative 1, the impacts on air quality from alternative 5 would be greater because there would be more visitors and visitor vehicles, especially at the base of the Tower. These adverse impacts would be negligible and long term.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Threatened, Endangered, and Candidate Species

Adding parking on both sides of the road through the prairie dog town would disrupt prairie dog habitat more than the actions of any other alternative. The net increase in disrupted area would amount to about 1 acre more than in the no-action alternative. Increasing parking would make conditions less-natural, increase interactions between visitors and prairie dogs, cause more stress on the prairie dogs, and increase areas where visitors might feed them human food. This would be a minor long-term adverse impact on prairie dogs and their habitat.

Widening and paving the trail around the prairie dog town would reduce the habitat slightly (0.3 acre) and could lead to stress on individual prairie dogs along the trail edge. Widening would discourage visitors from wandering off the trail and therefore would benefit the prairie dogs. Any displaced prairie dogs probably would move their burrows outside the new trail perimeter. This minor adverse impact on prairie dogs would be long term.

Conclusion: A net loss of about 1 acre of prairie dog habitat would be a minor long-term adverse impact on prairie dogs.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Wetlands

Enlarging the headquarters building would result in the long-term loss of natural and beneficial wetland values on less than 0.04 acre. A statement of findings for wetlands would be prepared

if this alternative was selected for implementation. The loss of wetland values of 0.04 acre would be a minor long-term adverse impact on wetlands.

Continuing the use of the special permit campground once or twice a year would continue the risk that campers might walk through a nearby wetland on their way to the river; this would compromise the natural functioning of this wetland. This negligible adverse impact on wetlands would be long term.

Conclusion: Enlarging the monument headquarters would result in the loss of 0.04 acre of wetland, a minor long-term adverse impact on wetlands.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Floodplains

Natural and Beneficial Floodplain Values. The natural and beneficial values of floodplains would continue to be compromised by the presence of the 50-site campground. This continuing adverse impact on natural processes would be major and long term.

Flooding. Under alternative 5 the 50-site campground would continue to occupy the 100-year floodplain. If a 100-year flood occurred on the Belle Fourche River, water in the campground would be 2 to 4 feet deep and of moderate velocity. In the past 40 years, two flood events from spring runoff and heavy rain covered the campground with 5 feet of water. Such an occurrence could be caused by heavy rain when the dam is already full or by flooding on one or more tributaries of the Belle Fourche. A breach of the Keyhole Dam would potentially cause a level of flooding that would endanger campers. These conditions would be hazardous to campground occupants, but there is a convenient escape route to higher ground toward the northwest, and an evacuation plan would be developed in accordance with NPS policy.

The *Crook County Emergency Plan* indicates that, "In the event of a dam breach at Keyhole, it will be approximately 3 hours before floodwaters reach Devils Tower National Monument." However, even though an evacuation plan would be prepared and potential warning from operators of the Keyhole Dam would reduce the risk to campers, these visitors would remain in some danger. Communications might not always be fully comprehended or acted upon. Miscommunications could leave campers at risk in the event of a 100-year flood or breach of the Keyhole Dam. Severe flooding has been infrequent, and risks are minor to moderate, but the results of flooding could cause major adverse impacts on the visitors involved.

Conclusion: The natural and beneficial values of floodplain areas would continue to be compromised by the presence of the 50-site campground. This continuing long-term adverse impact on natural processes would be major. Although severe flooding has been infrequent and risks are minor to moderate, flooding could result in major adverse impacts on the visitors involved.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Agriculture (including dryland farming) and ranching uses have greatly

reduced native prairie plants and animals and led to the alteration and erosion of soils. Wildlife have been affected by being displaced, and habitat has been lost through agricultural uses, animals, and plants. Probably the greatest impact on wildlife at the monument has been the restriction of movement caused by fencing much of the perimeter along the south, east, and west boundaries. Wildlife also are disrupted by development, employees, and visitors.

If the road was widened and repaved, approximately 0.68 acre of previously disturbed herbaceous vegetation along the road would be lost. Placing riprap in several locations to reduce the erosion of drainage ditches would result in the loss of 0.01 acre of grassland. Removing and revegetating at least four existing pullouts would result in the establishment of approximately 0.2 acre of additional grassland habitat dominated by native grasses and wildflowers. Small mammals would be displaced and native vegetation would be removed by these actions.

The development of some private or state lands for tourist-related activities or for residential or other uses could increase runoff and soil compaction and could alter soil regimes and vegetative communities, as well as causing the loss of plants in some areas. Increased development outside the monument would further fragment wildlife habitat and interrupt wildlife habits and movement. Less land would be available for prairie dog habitation. Road kills of rodents, larger mammals, and birds would increase because more development probably would increase traffic. If visitation increased, bringing more traffic, the air quality would be degraded further.

"The black-tailed prairie dog has undergone severe reduction in occupied range and population in Wyoming since settlement and the advent of farming and ranching. Occupied range has been reduced by over 80% from pre-settlement" (Campbell and Clark 1981). "Similar to other parts of the historical range, the major reduction in prairie dog populations probably occurred in the early 1900s when poisoning programs began in earnest"(AZ Game and Fish Dept. 1999).

The implementation of the "Memorandum of Understanding among State Fish and Wildlife Agencies within Black-tailed Prairie Dog Range: Conservation and Management of Black-tailed Prairie Dog in North America" (9 of 11 states) might lead to the development and implementation of comprehensive state plans. These plans would be designed to maintain the broadest distribution and greatest abundance possible within the fiscal realities of the state agencies and cooperating partners.

Cooperative partnerships might be developed with interested individuals and with private, state, tribal, and federal land managers. However, implementing such plans would take several years. For the time being, it is not expected that landowners outside the monument would allow prairie dogs to move onto their land. Therefore, the Devils Tower prairie dog colony would be unlikely to grow large enough to support ferrets and mountain plover. The population probably would continue to be small and isolated.

As part of road repaving, wooden posts would be replaced along the road and at pullouts adjacent to the prairie dog colony. This could temporarily displace individual animals but would not be likely to result in mortality. In areas occupied by prairie dogs, the centerline of WY 110 would be shifted north to avoid impacts on numerous burrows adjacent to the southern edge of the road (NPS 2000a).

The construction of the Keyhole Dam has greatly reduced the extent of the floodplain, associated wetlands, and the natural and beneficial values of floodplains and wetlands. At least some wetlands in the area probably have been filled to make more land available for growing crops. Cattle and sheep probably have been allowed to use some wetland and riparian areas in the vicinity of the monument. These practices decrease the area of wetlands and degrade natural and beneficial floodplain values in exchange for benefits to agricultural uses.

NPS structures and visitor uses in wetland and floodplain areas contribute to the loss of natural and beneficial values. Enlarging the headquarters building would result in the long-term loss of 0.04 acre of wetland and a short-term disturbance of 0.5 acre. Should this alternative be implemented, a statement of findings for wetlands would be prepared, including a wetlands restoration plan. Alternative 5 would not involve removing activities and structures from floodplains and wetlands or restoring natural and beneficial values in or outside the monument.

The presence of the dam would result in major long-term reductions in area and in beneficial values in floodplains and wetlands downstream of the dam on the Belle Fourche River. Repaving the main monument road would not result in any effect on any floodplain or wetland. Further development of floodplains and wetlands for residential, agricultural, or commercial uses would decrease the area on which natural and beneficial wetland and floodplain values would be preserved.

Overall, the above past, present, and future actions, in conjunction with the actions of this alternative, would result in major long-term adverse impacts on natural resources, including soils, vegetation, wildlife, prairie dogs, wetlands, and floodplains. Most impacts would result from previous actions, including agriculture, ranching, and dam construction. Alternative 5 would contribute a very small increment to the overall cumulative impact.

CULTURAL RESOURCES

Ethnographic Resources

Increased visitor access and associated development in several areas of the monument would detract from the solitude sought for religious ceremonies. This alternative, which calls for the highest level of development, would compromise the ethnographic resources of the Tower area and degrade the viewshed by increasing visitor use and vehicular traffic at the Tower and at the Joyner Ridge access road and trailhead. The ethnographic resources also would be compromised by paving the former trailer dropoff area to be used for tour bus parking. This long-term adverse impact on ethnographic resources would be moderate.

Reducing the concentrations of people in the northwest corner of the monument would give more protection to culturally sensitive areas and increase the opportunity for solitude in a smaller area than in alternatives 2, 3, and 4. Because most American Indian religious practitioners come as individuals or in very small groups, the permitting requirements would result in a negligible long-term adverse effect on their traditional cultural practices. Larger groups already are required to obtain permits; therefore, requiring groups of six or more to register with a ranger would continue an existing practice. The long-term adverse effect on ethnographic resources would be negligible.

Visual, auditory, and atmospheric intrusions would occur in the vicinity of all construction activities. These minor adverse impacts would be short term.

Conclusion: Increased visitor access and associated development in several areas of the monument would detract from the solitude sought for religious ceremonies. This alternative, which calls for the highest level of development, would compromise the ethnographic resources of the Tower area and degrade the viewshed by increasing visitor use and vehicular traffic at the Tower and at the Joyner Ridge access road and trailhead. .The ethnographic resources also would be compromised by paving the trailer dropoff area to be used for tour bus parking. This long-term adverse impact on ethnographic resources would be moderate.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for

visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Although past actions have affected ethnographic resources, no ongoing or future actions such as repaving the main road would have a perceptible impact on them. The actions of alternative 5 would not add appreciably to cumulative impacts.

Historic Resources

Visitor activity and traffic congestion would continue at the historic district at the base of the Tower and in the viewshed from the Tower. The buildings were intended to facilitate visitor use of the area, but the degree of congestion has increased so much over the years that each year there is a minor adverse impact on the historic setting during peak times.

Historic fabric could be lost and new visual nonhistoric elements could be introduced as a result of making historic buildings and structures accessible to people with impaired mobility to comply with the Architectural Barriers Act of 1968 and the Rehabilitation Act of 1973. The monument would develop design solutions using the *Secretary of the Interior's Standards* to meet accessibility requirements while minimizing impacts on cultural resources. Impacts would be assessed when specific proposals were evaluated. Any actions would be expected to have no more than a minor effect on historic buildings and structures.

The historic road corridor would be modified by adding parking lanes on both sides of the road at the prairie dog town, redesigning the entrance station area, and enlarging the headquarters building. These long-term adverse effects would be moderate.

Redesigning the entrance station area would change the setting of the national register-listed entrance station. The impact that this action would have cannot be known without more information on the details of design. This action could require additional mitigation to comply with section 106 of the National Historic Preservation Act.

Widening the road through the prairie dog town could alter some of the CCC elements of the historic road, such as culverts. The impact that this action would have cannot be known without more information on the details of design. This action could require additional mitigation to comply with section 106 of the National Historic Preservation Act.

Construction activities would cause visual, auditory, and atmospheric intrusions. These short-term adverse impacts would be minor.

Conclusion: Visitor activity and traffic congestion would continue at the historic district at the base of the Tower and in the viewshed from the Tower. This adverse impact on the historic setting during peak times would be minor.

Modifying the historic road corridor by adding parking lanes on both sides at the prairie dog town, redesigning the entrance station area, and increasing the size of the headquarters would result in a moderate long-term adverse impact.

Redesigning the entrance station area would change the setting of the national register-listed entrance station. Widening the road through the prairie dog town could alter CCC elements of the historic road, such as culverts. The impacts that these actions would have cannot be known without more information on the details of design. One or both of these actions could require additional mitigation to comply with section 106 of the National Historic Preservation Act.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in

the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: The number and integrity of CCC-made roadway features (such as rock walls and culvert headwalls) would continue to be gradually reduced by traffic, erosion, natural processes, and highway construction. With continuing aging of these 1930s structures, there is the potential for accelerated deterioration from natural causes, which could result in the loss of structural integrity and original materials.

Repaving the main monument road would not affect the historic buildings. Burying the culvert headwall would have a minor long-term adverse effect on one roadway contributing feature. A moderate long-term beneficial effect would result from rehabilitating the roadway. Traffic, natural processes, and new construction could damage or destroy CCC roadway structures, resulting in moderate long-term adverse cumulative impacts.

Overall, the above past, present, and future actions, in conjunction with the actions of this alternative, would result in long-term minor to moderate adverse impacts on historic resources. Most impacts would result from past actions and processes, including traffic, erosion, natural processes, and highway construction. Alternative 5 would contribute a very small increment to the overall cumulative impact.

Section 106 Summary: This summary was prepared with the use of the definitions of section 106 of the National Historic Preservation Act.

Under the regulations of the Advisory Council on Historic Preservation (36 CFR 800.9) addressing the criteria of effect and adverse effect, the National Park Service finds that enlarging the paved and gravel-surfaced parking areas at the base of the Tower would be a visual intrusion on the historic district and the ethnographic resource. It would be adverse.

Because the main road has been realigned in the past, realigning it in this alternative would have an effect that would not be adverse.

Continuing the requirement for permits to use the northwest corner of the monument would have an effect on ethnographic resources that would not be adverse.

The actions of alternative 5, taken together, would have an effect on cultural resources that would be adverse.

VISITOR EXPERIENCE

Visitors' Experience of Monument Resources

Adding more parking at the Tower area would reduce visitor frustration because visitors could find parking places more easily than at present. Improving the area's overall design would improve safety and help traffic to flow more efficiently. However, congestion and noise in the area would continue. The sounds and smells of automobiles and buses would mask natural sounds and smells, especially during peak use times.

More pavement would be visible from the Tower and the Tower trail. For many visitors, the overall level of development and activity at the base of the Tower would be inconsistent with the Tower's significance. Adding more restrooms would reduce the time that visitors would spend waiting in line. Although these effects would be an improvement over existing conditions, the experience of the prime monument resource would continue to be degraded by noise, traffic, and vehicle smells. Because most visitors in this prime resource area would be affected, this long-term adverse impact on visitors at peak use times would be moderate to major.

Adding vehicle pullouts along both sides of the road at the prairie dog town would increase the opportunities for visitors to stop, get out of their cars, walk along a widened surfaced trail, and watch prairie dogs "up close." This opportunity for close interaction with wildlife would be a

continued major beneficial effect for most visitors because of the high value that many people place on viewing wildlife.

Construction activities to add a new parking area near the Tower, improve the entrance station, enlarge the headquarters, pave the trailer dropoff area, improve parking at the Joyner Ridge trailhead parking area, and add new parking pullouts at the prairie dog town would result in short-term impacts. The visitor experience would be affected by noise from construction vehicles and equipment, visual intrusions from ground and vegetation disturbance, more traffic, the presence of large construction vehicles, and general disruption of circulation. These effects, although short term, could be moderate to major because they would occur in the monument's prime resource areas. These effects would be particularly severe for visitors who might have only one opportunity to visit Devils Tower and whose experiences were degraded by construction activities.

The visitor experience offered by the campground and the picnic area, while important to some visitors, is not fundamental to the monument's significance. Nevertheless, continuing these assets would constitute a long term moderate beneficial effect for visitors because of the popularity of these facilities.

The natural setting of the Tower area and the view from the Tower and the trails would be degraded by visual intrusions from parked vehicles, lights at night, and developments associated with the campground, the picnic area, the trailer dropoff area, and administrative headquarters. However, these adverse visual impacts would be minor because the developments would be relatively low key and would be somewhat screened by vegetation. Nevertheless, lights at night would continue to disrupt the view for the small numbers of visitors who might be at or on the Tower at night. This impact would be minor.

The quietest, most natural experiences in the monument are available in its northwest corner. Views of the Tower are outstanding, and the viewshed is virtually pristine. Although this area is not heavily visited, these kinds of experiences are important to the visitors who go there. Managing this small area specifically for these opportunities would result in a long-term moderate benefit for visitors.

Although the undeveloped, informal large group permit camping area near the entrance is not heavily used and not fundamental to the monument's mission, this area offers expanded opportunities for group recreation, but it also results in a minor adverse impact on the viewshed from the Tower and the trails. Continuing the availability of permit camping in this area would result in a minor long-term benefit for the groups served.

Access and Freedom to Go at One's Own Pace

Under alternative 5, visitors would be free to come and go around the monument at their own pace, depending on the availability of parking. For visitors to whom spontaneity is important, this freedom of movement would be perceived as a long term major beneficial effect.

Access to the Tower trail would continue to be congested during peak times, but modifying the steep trail approach for easier access would. result in a long term major beneficial effect for visitors who otherwise might be unable to experience the Tower.

Traffic congestion at the prairie dog town would cause frustration for visitors. This would be a minor adverse impact on most visitors during periods of low visitation. However, at peak use times the impact would be moderate, particularly if a visitor's time in the monument was limited.

Under alternative 5, visitors would not be inconvenienced by the need to drop off their towed vehicles before driving up to the Tower. This beneficial long-term effect would be minor because of the small number of people involved.

Upgrading the fee collection kiosk would reduce waiting times. Because most visitors would be affected, these changes could result in a moderate beneficial effect on visitors, especially at peak use times.

Upgrading the access road and parking at the Joyner Ridge trailhead could encourage more visitors to use the trail system. This would increase the range of activities and experiences for visitors who chose to hike. Because only a small number of visitors would be attracted to the Joyner Ridge area, this long-term beneficial effect would be minor.

Access to Orientation and Interpretation

The Tower visitor center facility would be too small to accommodate orientation and interpretive functions. Interpretive programs outside the visitor center in the Tower area would be limited by inadequate space and disruption by crowding, noise, and traffic. Some interpretation would be offered at the enlarged administrative headquarters building along the main road.

Overall, visitor frustration over a lack of orientation and interpretation would continue because of the facility limitations and crowding at the Tower area and in the visitor center. The limitations on interpretive opportunities would constitute a moderate to major adverse impact on visitors, many of whom place a high value on interpretive services.

Visitor Safety

Some vehicle accidents in the Tower area might result from traffic congestion and the need to manipulate large vehicles in a small space. The parking pullouts and pedestrian activity at the prairie dog town would lead to some traffic congestion and threaten the safety of vehicles and pedestrians. Vehicle accidents in the monument have been infrequent, and risks are considered minor to moderate, but an accident could cause a major adverse impact on the people involved.

Conclusion: Added parking in the Tower area would reduce visitor frustration because finding a parking place would be easier than before. Better overall design would foster more efficient and safer traffic flow. However, congestion and noise would continue. Although these effects would be an improvement over existing conditions, noise, traffic, and vehicle smells would continue to degrade the experience of the monument's prime resources. This long-term adverse impact on visitors would be moderate to major at peak use times. An improved approach to the Tower trail would have a major beneficial effect on visitors who otherwise might be unable to have a close experience of the Tower.

The Tower visitor center facility would be too small to accommodate orientation and interpretive functions, and its size could be reduced further to increase the number of restrooms. Some interpretation would be offered at the enlarged administrative headquarters building along the main road. Overall, visitor frustration over a lack of orientation and interpretation would continue because of the facility limitations and crowding at the Tower area and in the visitor center. The limitations on interpretive opportunities would constitute a long term moderate to major adverse impact on visitors.

Visitors would be free to come and go around the monument at their own pace, depending on the availability of parking. For visitors to whom spontaneity is important, this freedom of movement would be perceived as a long term major beneficial effect.

Although it is important to some visitors, the visitor experience offered by the campground and picnic area is not fundamental to the monument's significance. Nevertheless, continuing these assets would constitute a long term moderate beneficial effect on visitors because of the popularity of these facilities.

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific

purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

Cumulative Effects: Although past actions have affected the visitor experience, no ongoing or future actions such as repaving the main road would have a perceptible impact on it. The actions of alternative 5 would not add appreciably to cumulative impacts.

SOCIOECONOMIC RESOURCES

Businesses and Neighbors

The location of the Trading Post and KOA adjacent to the monument would continue to give those businesses a distinct competitive advantage over commercial outlets farther from the entrance. This would be a moderate beneficial long-term effect on those businesses.

As was described before, a transportation study (Robert Peccia & Associates 1999) indicates that 34% of the vehicles entering Devils Tower National Monument first enter the retail area immediately outside the entrance, and 41% of the vehicles leaving enter the retail area immediately outside the entrance. Anecdotal reports from these businesses indicate that lines of traffic block monument visitors from entering the businesses. Redesigning the entrance station to improve traffic flow and perhaps increasing the number of lanes or road width would make the line of waiting vehicles less likely to reach the front of businesses adjacent to the monument. This would not hold true during extreme periods of peak times

Without data on how many visitors want to stop at the retail area, and assuming that the same vehicles are not stopping upon entrance and exit, it appears that about 75% of vehicles manage to stop at the retail area. Assuming that all the vehicles that do not stop do not do so because the visitors in them do not want to stop, there would be no impact on businesses from redesigning the entrance station. Assuming that all 25% of the vehicles that do not stop contain visitors who would like to stop but are prevented from doing so by traffic, redesigning the entrance station would allow most of these visitors to stop. This long-term beneficial effect would be minor and intermittent, occurring at all but the most extreme peak times.

Adding parking along both sides of the road through the prairie dog town would improve traffic safety along the main road. This long-term beneficial effect would be minor.

Widening the access road to the Joyner Ridge trailhead, improving the road surface, and expanding the parking lot might cause increased visitor traffic in this area. This long-term adverse impact on access to private property would be negligible.

Conclusion: Assuming that all 25% of the vehicles that do not stop at businesses adjacent to the monument contain visitors who would like to stop but are prevented from doing so by traffic, redesigning the entrance station to improve the traffic flow would allow more of these visitors to stop. This minor beneficial effect would be long term, occurring at peak use times.

Adding parking along both sides of the road through the prairie dog town would result in a minor beneficial effect in the long term for owners of adjacent property. However, developing the Joyner Ridge access road would result in a negligible long-term adverse impact on their access to private property. On balance, the effects of these two actions would be beneficial.

Local and Regional Economy

The new restroom facilities included in this alternative would not affect local sewage and water systems because water and wastewater systems would be developed in the monument.

Construction impacts would be felt primarily while construction was taking place, which would vary by project. Multiple projects could occur simultaneously. The National Park Service's cost estimate for the construction work of alternative 5 is roughly $2.3 million, of which approximately 50% would go for labor, with the rest going toward materials and services, according to rule-of-thumb estimates for the construction industry. This translates into the equivalent of 37 one-year construction jobs over the duration of the various construction periods. (The construction projects of this alternative, which could last from a week to more than a year, could include widening or narrowing monument roads, paving the Tower parking area, building a new comfort station, and expanding the existing headquarters. The Devils Tower staff might complete some projects, but private contractors would be hired for most of the work.)

The short-term construction projects would contribute only a small percentage of the regional economy's jobs and earnings. Approximately 2,100 of the 26,500-person labor force in Crook, Campbell and Weston Counties were employed in the construction industry during the third quarter of 1999 (1,900 of them in Campbell County). Because 37 jobs is a very small portion of the 2,100 construction jobs in the area, this short-term beneficial effect on the local and regional economy would be minor.

Short-term construction also would have certain spinoff effects. Data in the *1998 Occupational Employment Statistics Wage Survey* (Wyo. Dept. of Employment 1998) show that construction jobs in the Devils Tower region pay an hourly mean wage of $12.41. The 37 one-year jobs that would be created during the construction period would have a total payroll of roughly $1.15 million. Construction laborers would add to the food, fuel, and possibly lodging expenditures made in the region for the duration of the construction period. This would directly benefit retailers immediately outside the Devils Tower National Monument entrance and in nearby towns. This minor beneficial effect would be short term.

Sales taxes collected on the expenditures of construction workers would benefit local jurisdictions. According to the Crook County Treasurer's Office, Crook County's sales tax rate is 5%. This short-term beneficial effect on Crook County's sales tax revenues would be minor. Assuming that construction materials purchased by contractors would not be subject to the National Park Service's tax-exempt status, local jurisdictions would have tax revenues on $1.1 million in purchases of construction materials. The collection of about $57,500 in tax revenues would be a moderate short-term beneficial effect on county sales tax revenues.

A high-end estimate of $1,150,000 of construction materials could be purchased in the region, benefiting regional suppliers. This short-term beneficial effect on regional suppliers would be minor.

Over roughly three years, the dollars spent on construction would circulate throughout the regional economy to generate an additional total of $1,265,000 to $1,679,000(above and beyond the $2.3 million in construction). This would result in a minor long-term beneficial effect on the regional economy.

Conclusion: The short-term construction projects of alternative 5 would have a beneficial effect on employment opportunities and on the local and regional economy, including indirect effects on local businesses and tax revenues. The equivalent of 37 one-year jobs would be created during the construction period, with a total payroll of roughly $1,150,000. The total impact on Wyoming's economy of the proposed construction would be up to $3,979,000. The construction projects would be short term and would provide only a small percentage of existing jobs and earnings in the regional economy. The creation of 37 one-year construction jobs at Devils Tower would represent a small portion of the 2,100 construction jobs in the area. Construction at Devils Tower under alternative 5 would have a minor long-term beneficial impact on overall employment in the region.

Cumulative Effects: Although past actions have impacted socioeconomic resources, no ongoing or future actions such as repaving the main road would have a perceptible impact on them. The actions of alternative 5 would not add appreciably to cumulative impacts.

UNAVOIDABLE ADVERSE IMPACTS

The following paragraphs describe the more important (moderate and major intensity) adverse impacts that would result from alternative 5. These are residual impacts that would remain after mitigation was implemented. The negligible and minor impacts are listed in the foregoing analysis.

Natural Resources

Less than 1 acre of the natural soil profile could be lost through some regrading and the possible construction of the retaining walls needed for enlarging the lower parking area at the base of the Tower, as well as through the widening of Joyner Ridge Road and the road through the prairie dog town. This long-term adverse impact would be moderate.

Hardened surfaces (including gravel) would increase by 2 acres. The adverse impacts on soil erosion, soil nutrient transport, and vegetative composition caused by the increase in hardened surfaces would be moderate and long term. Much of this effect would occur at the prime resource area at the Tower.

The natural and beneficial values of floodplain areas would continue to be compromised by the presence of the 50-site campground. This continuing long-term adverse impact on natural processes would be major. Although severe flooding has been infrequent and risks are minor to moderate, flooding could result in major adverse impacts on the visitors involved.

Cultural Resources

Increased visitor access and the associated development in several areas would detract from the solitude sought for religious ceremonies. Alternative 5, which calls for the highest level of development, would compromise the ethnographic resources of the Tower area. It also would degrade the viewshed by increasing visitor use and vehicular traffic at the Tower and the Joyner Ridge access road and trailhead. The viewshed also would be degraded because the current trailer dropoff area would be paved for tour bus parking. This moderate adverse impact on ethnographic resources would be long term.

Adding parking lanes on both sides of the road at the prairie dog town would modify the historic road corridor, as would redesigning the entrance station area and increasing the size of the headquarters. These moderate adverse impacts would be long term.

Visitor Experience

Adding more parking at the Tower area would reduce visitor frustration because parking places would be easier to find than at present. Improving the area's overall design would improve safety and help traffic to flow more efficiently. However, congestion and noise would continue. The sounds and smells of automobiles and buses would mask natural sounds and smells, especially during peak use times.

More pavement would be visible from the Tower and the Tower trail. Many visitors would regard the level of development and activity at the Tower's base as inconsistent with its significance. Adding more restrooms would reduce visitors' time spent waiting in line. These effects would be an improvement over existing conditions, but the experience of the prime monument resource would continue to be degraded by traffic, noise, and vehicle smells. Because most visitors in this prime resource area would be affected, this long-term adverse impact on visitors at peak use times would be moderate to major.

Construction activities to add a new parking area near the Tower, improve the entrance station, enlarge the headquarters, pave the trailer dropoff area, improve parking at the Joyner Ridge trail-

head, and add new parking pullouts at the prairie dog town would result in short-term impacts. The visitor experience would be affected by noise from construction vehicles and equipment, visual intrusions from ground and vegetation disturbance, more traffic, the presence of large construction vehicles, and general disruption of circulation. These effects, although short term, could be moderate to major because they would occur in the monument's prime resource areas. These effects would be particularly severe for visitors who might have only one opportunity to visit Devils Tower and whose experiences were degraded by construction activities.

Traffic congestion at the prairie dog town would cause frustration for visitors. This would be a minor adverse impact on most visitors during periods of low visitation. However, at peak use times the impact would be moderate, particularly if a visitor's time in the monument was limited.

Overall, visitor frustration over a lack of orientation and interpretation would continue because of the facility limitations and crowding at the Tower area and in the visitor center. The limitations on interpretive opportunities would constitute a moderate to major adverse impact on visitors because many of them place a high value on interpretive services.

Some vehicle accidents in the Tower area might result from traffic congestion and the need to manipulate large vehicles in a small space. The parking pullouts and pedestrian activity at the prairie dog town would lead to some traffic congestion and threaten the safety of vehicles and pedestrians. Vehicle accidents in the monument have been infrequent, and risks are considered minor to moderate, but an accident could cause a major adverse impact on the people involved.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

Some regrading at the Tower lower parking area could result in the loss of a small part of the natural soil profile on less than 1 acre. This loss would be permanent and irreversible. The loss of 0.04 acre of wetland from enlarging the headquarters building would be irreversible.

Severe flooding has been infrequent, and the risks are minor to moderate; however, flooding could result in major adverse impacts on the visitors involved. Any loss of life would be irreversible.

RELATIONSHIP OF SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Under this alternative, visitors would be accommodated as they came to the monument, rather than the monument trying to manage visitation to reduce congestion.

About 5 acres of natural resource areas in the monument would be disturbed in the short term by construction. Hardened surfaces would increase by 2 acres, and no areas would be rehabilitated. The short-term visual intrusions from demolition, construction, and rehabilitation would give way to a long-term increase in the size the available parking area at the Tower, the road to the Joyner Road trailhead, the prairie dog town, and headquarters.

Increased visitor access and associated development in several monument areas would detract from the solitude that American Indians seek for religious ceremonies. The ethnographic resources in the Tower area would be compromised. Increased visitor use, more vehicle traffic at the Tower and the Joyner Ridge access road and trailhead, and the changes in the trailer drop-off area (paving it to use tour bus parking) all would degrade the viewshed.

The long-term integrity of the national register-listed main road could be compromised by widening and increasing parking at the prairie dog town, redesigning the entrance station area, and increasing the size of the headquarters facility. Redesigning the national register-listed entrance station area would change its setting.

Increasing the size of the Tower parking area would reduce visitor frustration because finding parking spaces would be easier. Improving the area's overall design would improve safety and help traffic to flow more efficiently. However, congestion and noise in the area would continue. Although these effects would be an improvement over existing conditions, noise, traffic, and vehicle odors would continue to degrade the experience of the monument's prime resource.

IMPAIRMENT

The monument's resources or values would not be impaired because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Devils Tower National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for visitor enjoyment, or (3) identified as a goal in the monument's *General Management Plan* or other relevant NPS planning documents.

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CONSULTATION AND COORDINATION WITH OTHERS

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PUBLIC INVOLVEMENT

As detailed in the "Purpose and Need" chapter, the scoping process for this *General Management Plan / Environmental Impact Statement* began in 1999. Four newsletters were published in 1999 and 2000 to inform the public about the planning process and solicit comments regarding the possible alternatives for managing Devils Tower National Monument. Members of the public commented at open house meetings, and written comments were received as well. American Indians were consulted throughout the planning process.

Many comments were received from the public during the development of the plan. A significant change in shuttle staging location from the present campground to the area north of the entrance station was recommended as a direct result of public input from *Newsletter 4* and public meetings held in November 2000. When the alternatives were being developed, the public expressed concern about three specific topics:

(a) ***Moving the campground*** (and the associated rehabilitation of the floodplain and the riparian area that it occupies). Commenters generally said they would prefer that the present Belle Fourche River campground be retained.

(b) ***Establishing a transportation shuttle.*** Some people expressed discontent about the limitations to visitor movement that would be imposed by the need to adhere to a shuttle schedule; some said they would not like being separated from their vehicles; others said more time would be needed to visit Devils Tower if a shuttle system was established. Others commenters supported the system, saying the visitor experience would be improved by moving the parking farther from the historic district. Some said they would appreciate having expanded restroom facilities (which would be added in alternatives in which a shuttle system is included). Others mentioned that they would like having an opportunity for an additional interpretive experience on the shuttle.

(c) ***Relocating the picnic area.*** Public comments were received about the possibility of moving the picnic area to a location near the orientation center. Some people said they like the present picnic area and would like to be assured that the quality of the experience at the new picnic area would be similar to that of the present one.

AGENCIES AND ORGANIZATIONS TO WHICH THIS DOCUMENT WAS SENT

[Asterisk (*) indicates that a comment on the *Draft General Management Plan / Environmental Impact Statement* was received from this organization.]

Federal Agencies

Advisory Council on Historic Preservation
Federal Emergency Management Agency
U.S. Army Corps of Engineers
U.S. Department of Agriculture
- Big Horn National Forest
- Black Hills National Forest, Bearlodge Ranger District
- Bridger-Teton National Forest
- Shoshone National Forest
- Natural Resources Conservation Service

U.S. Department of the Interior
- Bureau of Land Management
  - Wyoming State Office
  - Newcastle Field Office
- Bureau of Reclamation
- National Park Service
  - Badlands National Park
  - Bighorn Canyon National Recreation Area
  - Fort Laramie National Historic Site
  - Fossil Butte National Monument
  - Grand Teton National Park
  - Jewel Cave National Monument
  - Mount Rushmore National Memorial
  - Washington Office of Strategic Planning
  - Wind Cave National Park
  - Yellowstone National Park
- U.S. Fish and Wildlife Service*
- U.S. Geological Survey

U.S. Environmental Protection Agency*

U.S. Senators and Representatives

U.S. Representative Barbara Cubin
Office Of Senator Mike Enzi
Office Of Senator Craig Thomas

State Agencies

Wyoming Department Of Environmental Quality
Wyoming Department of State Parks and Cultural Resources
- Keyhole State Park
- State Historic Preservation Office*

Wyoming Department Of Transportation
Wyoming Game and Fish Department*
Wyoming Office of Tourism
Wyoming State Clearinghouse*
- Office for Federal Land Policy

State Officials

Wyoming Governor Jim Geringer
Wyoming State Representative Marlene J Simons

American Indian Tribes With Potential Cultural Affiliation to the Monument

Assiniboine and Lakota of Montana
Blackfeet
Blood (Canada)
Crow*
Cheyenne River Sioux
Crow Creek Lakota
Devil's Lake Lakota
Eastern Shoshone
Flandreau Santee Lakota
Kootnai and Salish
Lower Brule Lakota
Northern Arapaho
Northern Cheyenne
Oglala Lakota
Pigeon (Canada)
Rosebud Lakota
Sisseton-Wahpeton Sioux
Southern Arapaho
Southern Cheyenne
Standing Rock Sioux
Three Affiliated Tribes
Turtle Mountain Chippewa
Yankton Lakota

Local, City, and County Governments

Crook County
- Office of County Commissioners*
- School District #1

Sheriff
Weed and Pest Control
Hulett City Council
Moorcroft City Council
Pine Haven City Council
Sundance City Council

Organizations and Businesses

Belle Fourche Chamber Of Commerce
Buffalo Chamber Of Commerce
Devils Tower Conservation District,
Devils Tower Natural History Association
Devils Tower Tourism Association
Gillette Chamber Of Commerce
Hulett Chamber Of Commerce
National Outdoor Leadership School
National Parks Conservation Association*****
Newcastle Chamber Of Commerce
Sheridan Chamber Of Commerce
Sierra Club–Black Hills
Spearfish Chamber Of Commerce
Sundance Times

PUBLIC REVIEW OF THE DRAFT DOCUMENT

This section contains a summary of comments received through letters and e-mail after the *Draft General Management Plan / Environmental Impact Statement* for Devils Tower National Monument was released on July 2, 2001. The National Park Service considered all written comments according to the requirements of 40 CFR 1503.

RECORD OF PUBLIC COMMENTS

A notice of availability of the draft document was published in the *Federal Register* on July 2, 2001 (FR Vol. 66, No. 127). Approximately 75 copies of the draft were distributed to government agencies, public interest groups, and individuals. In addition, the complete text of the *Draft General Management Plan / Environmental Impact Statement* was posted on the NPS Web site.

WRITTEN COMMENTS

The park's fourth newsletter presented a revised draft of the alternatives. Approximately 5,500 individuals sent preprinted letters indicating support for alternative 3, the preferred alternative. A total of 2,000 additional comment letters were received in response to the draft document itself from governing bodies, government agencies, organized interest groups, and individuals during the comment period. Written comments were accepted through September 30, 2001. All letters from governing bodies, government agencies, and organizations are reproduced on the following pages, as are letters from individuals that were chosen to represent the range of issues included in individual letters. The following paragraphs contain the NPS response to suggestions for modification of the draft plan:

Comment: It was suggested that the preferred alternative "provide a specific and detailed plan for creating a full and prominent context for . . . interpretative exhibits of Native American values and history."

> We suggest that language be added to include specific information about the nature and context of the interpretation planned, and that the addition clearly state the importance and priority to be placed on Native American activities. When I recently visited Devils Tower, I was struck by the degree to which 100 years of rock climbing disproportionately capture visitor attention through extensive displays at the visitor center while overshadowing thousands of years of indigenous peoples' use and value in the area. NPCA [the National Parks Conservation Association] believes that this imbalance should be assertively addressed and corrected through adoption of proactive directions and measures in the GMP . . . the Climbing Management Plan provides some good examples of ways the Monument can improve cultural interpretation as exampled [*sic*] in relevant sections on pages 15 and 16. Referencing Native American sections here could align with our recommendations.

Response: The National Park Service agrees that more emphasis on this theme would be desirable. One factor limiting that emphasis has been the fact that Devils Tower National Monument has been severely limited in places to increase the presentation of themes. The preferred alternative provides for additional venues in which to locate interpretive media and programs. The monument also has begun a project of totally replacing the visitor center exhibits. The new exhibits will include a much more in-depth treatment of American Indian connections with the Tower.

In the National Park Service, a general management plan is used to prescribe the management of natural and cultural resources, visitation, and development over a 15 to 20 year period. One of the implementation plans that normally follow a general management plan is an interpretive plan. The interpretive plan is the vehicle for examining how interpretive themes such as American Indian beliefs and cultural practices at Devils Tower will be conveyed. Such a plan will

describe specific media and programs to be developed. The important theme mentioned in public comment will be one subject of a future interpretive plan.

The finding of no significant impact for the *Final Climbing Management Plan* for Devils Tower National Monument (1995) is reaffirmed on page 4 of the *Draft General Management Plan / Environmental Impact Statement* and summarized in appendix B. One of the four objectives of the climbing plan (from appendix B) is, "to increase visitors' awareness of American Indian beliefs and traditional cultural practices at Devils Tower." Since approval of the climbing plan, modifications have been made to interpretive exhibits, other media, and programs to reach this goal. The National Park Service believes that pages 15 and 16 of the *Climbing Management Plan* already have been observed by reaffirming the entire plan on page 4 of the *Draft General Management Plan* and including the summary in appendix B.

Comment:

> NPCA strongly encourages . . . DETO [Devils Tower National Monument] to amend the current preferred alternative to include a dedicated bike/pedestrian path to follow the road from the entrance to the visitor center. . . . We believe DETO needs to add greater specificity and direction to its current recommendations in this section of the plan. In particular we are deeply disappointed in the fact that bicycle transportation options have been largely dismissed and ignored within the DETO plan.

Response: The option of bicycling to the tower is described in the document summary and in the first paragraphs of the descriptions of alternatives 3 and 4. The ability of visitors to bicycle to the Tower is emphasized in the preferred alternative (alternative 3 — see page 35). One reason that alternative 3 was selected as the preferred alternative was that it had the greatest ease of access for visitors. "Ease of access to the monument" includes the ability to visit the monument on one's own schedule and seldom encountering waiting lines at the entrance station. Alternative 3 was rated highest for this criterion because waiting lines at the entrance station would be reduced and visitors could enter the monument before being required to ride a shuttle; whereas in alternative 4 the shuttle staging area would be outside the boundaries, making a longer distance to walk or bicycle to reach monument features.

The alternative of building a parallel trail was not included for two reasons: first, resource impacts of the bicycle trail, including impacts on the historic road corridor, would be too great; second, at times of the year when the shuttle would not be in operation, vehicular traffic would be low enough for bicycles to use the road safely. During times of the year when the shuttle was operating, there would be very little traffic on the road, and bicycles could use the road safely.

Comment: Members of the public have expressed some concern to Devils Tower National Monument staff about closing the campground.

Response:

Devils Tower National Monument is primarily a day use area, with most visitors spending 1–2 hours at the park. Limited staffing and funding should be concentrated on meeting the needs of these daytime visitors. In addition, occupancy of the campground has dropped precipitously in the last few years, so that one of the two campground loops (30 campsites, rather than 50) can accommodate most people who want to camp. During this same period, more nearby camping options have become available from the private sector beyond the existing camping opportunities at the adjacent KOA and Tower View campgrounds and on U.S. Forest Service lands.

The campground is within the 100-year floodplain. Even with the Keyhole Dam on the Belle Fourche River upstream of the park, the campground has been and will continue to be flooded when high spring runoff combines with high precipitation events. It is inappropriate to place visitors in overnight facilities such as the campground that are subject to flooding.

The campground facilities are more than 40 years old. Although they have been maintained at an acceptable standard, costs associated with this upkeep have been rising steadily, especially due to frequent plumbing problems. All the campground infrastructure needs to be replaced, including the waterline, the septic system, restrooms, campsites, picnic tables, fire grates, and roads. The high cost of operating and maintaining the campground, combined with the high cost of campground replacement, makes it imprudent to reinvest considerable monies to reconstruct the campground in a floodplain environment.

The campground lies in a dying cottonwood forest, and no regeneration has occurred since the construction of the Keyhole Dam. Even given cyclic hazard tree reduction work, these cottonwoods would present a hazard to campers during a significant storm event, as large limbs have fallen and will continue to fall, although infrequently.

The campground also is adjacent to a prairie dog town. During upswings in the prairie dog population, prairie dogs have moved into the campground, and will continue to do so, posing a safety hazard (falling) because of burrows and increasing the likelihood of direct contact between campers and prairie dogs.

Some detailed comments were received about the design of areas such as the new picnic area. These will be passed on to the designers when the implementation phase begins after completion and approval of the *General Management Plan.*

The following pages contain copies of the letters that the National Park Service received from governing bodies, government agencies, and organizations, along with certain letters from individuals that were chosen to represent the range of issues included in individual letters.

Letters p. 171 - 184 are in separate PDF files.

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APPENDIXES, BIBLIOGRAPHY, PREPARERS, AND INDEX

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APPENDIX A: DEVELOPING THE PREFERRED ALTERNATIVE

To develop a preliminary preferred alternative, the planning team evaluated the five draft alternatives that had been reviewed by the public. To minimize the influence of individual biases and opinions, the team used an objective analysis process called "Choosing by Advantages." This process, which has been used extensively by government agencies and the private sector, evaluates different choices (in this case, the five draft alternatives) by identifying and comparing the relative advantages of each according to a set of criteria.

"GIVENS" AND DESIRED CONDITIONS

First, it is useful to consider the assumptions or "givens" that affected the analysis of the alternatives. These givens are based on the purpose and significance, laws and policies, and public concerns and comments. The givens are listed below in two categories, one representing conditions that must be met by the preferred alternative; the second representing conditions that would be desirable for the preferred alternative to meet.

The actions in the preferred alternative must accomplish the following:

- would not adversely impact threatened and endangered species in ways that could not be mitigated
- would result in no net loss of wetlands
- would meet clean air and water standards
- would allow no loss of cultural resources without complete documentation
- would allow public access
- would provide safe, sustainable, and efficient operations for resource protection and visitor use

The following actions would be desirable in the preferred alternative:

- would result in little or no adverse impact on plants, animals, or soils
- would preserve properties eligible for the National Register of Historic Places
- would allow maximum public access consistent with resource protection and visitor experience goals
- would result in minimum disruption of desired experiences for users

COMPARING THE ALTERNATIVES

The next step in the Choosing by Advantages process was to develop the criteria that would be used to compare the alternatives. Using the givens presented above and factors that were commonly mentioned by the public in commenting about the alternatives, the team identified five criteria by which to evaluate the alternatives.

- visitor experience at the base of the Tower
- ease of access to the monument
- overall visitor freedom of movement within the monument
- visitor understanding of the monument's significance
- preservation of the viewshed

The effects on wildlife habitat and other natural resource criteria were considered; however, the alternatives were found to have only minor impacts on resources and to be similar in those impacts, and so the criterion was not a major factor in selecting the preferred alternative.

The team identified the relative advantages of each alternative for each of the criteria. Each advantage was given a point value that reflected its importance. Then, by adding up the scores for each alternative, the team was able to determine how the alternatives compared overall. The costs of implementing the alternatives were then compared to examine the relationships between advantages and costs. The relative advantages of the alternatives for each criterion are summarized below.

Visitor Experience at the Base of the Tower

The area in "visitor experience at the base of the Tower" is the upper and lower parking areas and the visitor center .Alternative 2 best met this criterion because of the total reduction in traffic and conges-

tion. Alternatives 3 and 4 also represented a significant improvement over existing conditions, despite the potential for noise from shuttle vehicles and continued high concentrations of visitors in the Tower area. Alternative 5 represented only minimal improvement over existing conditions.

Ease of Access to the Monument

"Ease of access to the monument" includes the ability to visit the monument on one's own schedule and seldom encountering waiting lines at the entrance station. Alternative 3 was rated highest for this criterion because waiting lines at the entrance station would be reduced and visitors could enter the monument before being required to ride a shuttle; whereas in alternative 4 the shuttle staging area would be outside the boundaries, making a longer distance to walk or bicycle to reach monument features. Alternative 2 rated lowest because, with a reservation system, some visitors might be unable to visit the monument. This was considered a major disadvantage and significantly lowered the overall score for alternative 2. Alternative 5 rated only slightly higher than existing conditions, but lines at the entrance station could still be common.

Overall Visitor Freedom of Movement

"Overall visitor freedom of movement within the monument" includes the ability to visit features on one's own schedule and finding parking easily. Alternatives 2 and 5 rated highest in this area because both would reduce the parking problem and would not require riding a shuttle. Alternatives 3 and 4 received lower ratings because of the necessity for visitors to ride a shuttle at peak times.

Visitor Understanding of the Monument's Significance

Visitor understanding of the monument's significance" includes offering high quality interpretive services for visitors. Alternatives 3 and 4 rated highest for interpretive opportunities because of the inclusion of a staging area, interpretive opportunities on the shuttle, and the ability to keep more facilities open in the winter. Alternative 5 rated lowest because of the continued crowding at facilities and features.

Preservation of the Viewshed

The viewshed to be preserved comprises views within the park from the Tower and from the Tower and Red Beds trails. The overall reduction in development in alternative 2 gave it the best score for this criterion. Alternative 4 was scored lowest because of the size of new developments and the possibility that screening them might be difficult or impossible. The developments called for in alternatives 3 and 5 probably could be screened from many areas; therefore, those alternatives were scored higher than alternative 4.

CHOOSING THE PREFERRED ALTERNATIVE

Overall, alternative 3 received the highest score and was adopted as the preferred alternative. Alternative 4 received the next highest score; it also would have the minor advantage of removing the administrative and maintenance facilities from wetland areas. However, the cost of implementing alternative 4 would be significantly higher than alternative 3, and the environmental advantage would not be great enough to justify the additional expense.

As a result of subsequent public comment, alternative 3 was revised to allow for the restoration of natural resources and floodplain values in the existing campground and picnic area complex. The greatly enhanced the overall advantages of the preferred alternative.

APPENDIX B: SUMMARY OF 1995 CLIMBING MANAGEMENT PLAN

The *Final Climbing Management Plan / Finding of No Significant Impact: Devils Tower National Monument, Crook County, Wyoming* set a new direction for managing climbing activity at the Tower for the next three to five years. Its purpose is to protect the natural and cultural resources of Devils Tower and to provide for visitor enjoyment an appreciation of this unique feature. The National Park Service will manage Devils Tower as a significant natural and cultural resource. The Tower will be managed primarily as a crack climbing site in a way that will be more compatible with the butte's geology, soils, vegetation, nesting raptors, visual appearance, and natural quiet. Recreational climbing at Devils Tower will be managed in relation to the Tower's significance as a cultural resource. The replacement of existing bolts and fixed pitons will be allowed, but no new bolts or fixed pitons will be permitted on the Tower. In this way, the National Park Service intends that there be no new physical impacts on Devils Tower.

In respect for the reverence many American Indians hold for Devils Tower as a sacred site, rock climbers will be asked to voluntarily refrain from climbing on the Tower during the culturally significant month of June. The monument staff will interpret the cultural significance of Devils Tower for all visitors, along with the more traditional themes of natural history and rock climbing.

There are many benefits to the implementation of this plan. Its environmental consequences will include increased protection for natural resources. No critical habitat for listed species will be negatively affected. Visitor experience will be enhanced by a more diverse and balanced interpretive program. In turn, improved communication and understanding among the monument's user groups will lead to greater respect and tolerance for differing perspectives.

The objectives of the *Climbing Management Plan* are as follows:

- to preserve and protect the monument's cultural and natural resources for present and future generations
- to manage recreational climbing on the Tower
- to increase visitors' awareness of American Indian beliefs and traditional cultural practices at Devils Tower
- to provide the monument with a guide for managing climbing use that is consistent with NPS policies and other monument management plans

APPENDIX C: LEGISLATION

establishing legislation, map, and addition legislation (3 pages)

legislation, p. 2

legislation, p. 3.

APPENDIX D: LETTER FROM U.S. FISH AND WILDLIFE SERVICE

Letter about T&E species, 3 pages

USFWS letter, p.2

USFWS letter, p.3

APPENDIX E: STATEMENT OF FINDINGS FOR WETLANDS

Statement of Findings for

Executive Order 11990: Protection of Wetlands

Expand Existing Headquarters and Relocate Parking Area

Devils Tower National Monument

Crook County, Wyoming

Recommended:

_____

Superintendent, Devils Tower National Monument Date

Certification of Technical Adequacy and Servicewide Consistency:

_____

Chief , Water Resources Division Date

Approved:

_____

Regional Director, Intermountain Region Date

STATEMENT OF FINDINGS FOR EXECUTIVE ORDER 11990
(PROTECTION OF WETLANDS)

DEVILS TOWER NATIONAL MONUMENT
CROOK COUNTY, WYOMING
GENERAL MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT

INTRODUCTION

The National Park Service (NPS), in its preferred alternative for its general management plan, is proposing to double the size of its 1,150 square foot headquarters building and move the 25-car parking area from in front of the building to behind it. This wetland Statement of Findings (SOF) focuses on the wetland impacts that would be associated with this construction. The purpose of this SOF is to present the rationale for enlarging the building and moving the parking area in a location containing a wetland and to present a mitigation plan to compensate for the loss of a small area of this wetland remnant. The project would fill 0.03 acre of the approximately 2-acre wetland. The area to be impacted and the proposed mitigation site are shown on the map on a subsequent page.

In addition to the area of wetlands that has already been impacted by the headquarters building, implementing the preferred alternative would result in the long-term loss of 0.03 acre. Constructing the additions to the headquarters building and moving the parking area would result in the short-term disturbance of less than 0.5 acre of the wetland. Short-term disturbance would be caused by the use of equipment to dig holes for the placement of building foundations, to pour building foundations, and to place the surface on the new parking area. The site would be restored by scarifying any compacted areas and revegetating with plants similar to those present before the disturbance. The duration of the site disturbance is expected to be less than two months during summer. The restoration would be done as part of the final phase of construction. It would probably take several years for the disturbed wetland vegetation to fully recover. Please see the discussion of best management practices below, under "Wetland Avoidance and Minimization," for information on the protection measures that would be implemented during construction.

This SOF has been prepared in accordance with the guidelines of NPS Director's Order 77-1, *Wetland Protection*. The purpose of this Director's Order is to establish NPS policies, requirements, and standards for implementing Executive Order (EO) 11990, *Protection of Wetlands* (42 Fed. Reg. 26961). The objective of that EO is to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy, modification or destruction of wetlands.

ALTERNATIVES CONSIDERED

Alternatives 1 and 2 would make no exterior changes to the headquarters. The impacts on the wetland would not change. Alternative 3 is the preferred alternative described in this statement of findings. It would double the size of park headquarters and move the parking area to the back of the headquarters building. Moving the parking area would take it out of the viewshed of the historic road. Alternative 4 would relocate the headquarters outside the park with a shuttle staging area. Alternative 5 would double the size of park headquarters but leave the parking area in front of the building.

Alternatives 1 and 2 were rejected because they would do nothing to alleviate the crowded conditions at headquarters. Offices for park staff are in four buildings located throughout the park. Only two of these buildings were designed for office space. The other two buildings are historic log cabins that have been modified for office space. None of these buildings has adequate space for today's staff and office requirements. In addition, there is inadequate storage space and no facilities for staff meetings or break rooms. The cooperating association has inadequate office and bookstore space.

The "Choosing by Advantages" process was used to select the preferred alternative. To comply with Director's Order 77-1, section 2.2.G, which states, "Where natural wetland characteristics or functions have been degraded or lost due to previous or ongoing human activities, the National Park Service will, to the extent appropriate and

practicable, restore them to pre-disturbance conditions," the National Park Service has evaluated an alternative (alternative 4) that would remove the headquarters building from its current location on a filled wetland. While alternative 4 had the advantage of removing park administrative and maintenance facilities from wetland areas, the National Park Service did not choose this as the preferred alternative because the cost of implementing alternative 4 was significantly higher than for alternative 3 and the environmental advantage would not be great enough to justify the additional expense.

Compared to other alternatives, alternative 5 could provide only minimal improvement in the visitor experience at the base of the tower, would not solve the problem of lines at the entrance station, and would result in continued crowding at facilities and park features. It would leave the parking area in the viewshed of the historic road (see map, next page).

WETLANDS WITHIN THE PROJECT AREA

Surveys for wetlands in the project area were performed in June 2000. The wetland survey information included descriptions of soils, vegetation, and hydrology. The secondary source data included the U.S. Fish and Wildlife Service National Wetland Inventory maps, Crook County soil maps, and preliminary general management plan alternatives prepared by the National Park Service.

Wetlands identified in the project area exhibited the characteristics of jurisdictional wetlands as defined under section 404 of the Clean Water Act and the ecological conditions that correspond to the wetland classification system in the Cowardin classification of wetlands and deepwater habitats (USFWS 1979).

Vegetation/wetland surveys were performed over a two-day period for land areas identified for potential development/visitor use in the draft alternatives for the *General Management Plan.* Dominant species were recorded during walk-through surveys. The vegetation lists provided are not comprehensive, but they represent the most frequently noted species and/or species that assist in identifying the specific community type.

It should be noted that wetland identifications were not based on formal wetland delineations, but instead were based on visual assessments of soils and hydrology, and on plant identifications made by the vegetation ecologist of the Intermountain Support Office, National Park Service. The area to be impacted by the proposed headquarters expansion and construction was identified as deciduous upland forest in a previous vegetation study (USGS 2000). It is not known if the specific area associated with the proposed headquarters expansion site was actually visited during the above 2000 vegetation analysis or if it was lumped into the larger associated vegetation type. Although the site is considered marginal in nature, the IMSO vegetation ecologist thought a precautionary "wetland" identification was warranted based on the following factors: (1) the location of the site within a drainage, (2) the dominance of several FAC to FACW plant species, and (3) visual signs of current seasonal short-term (temporary) flooding.

The following wetland type was identified in the immediate project vicinity:

PFO1A: Palustrine Forested Broad-Leaved Deciduous, Temporarily Flooded

The wetland covers approximately 2 acres. The buildings (headquarters, built in 1935, and a residence) appear to have been placed on fill material (<0.25 acre) and the land area behind the headquarters building contoured to improve drainage. Dominant species include green ash (*Fraxinus pennsylvanica* — native), bur oak (*Quercus macrocarpa* — native), black cherry (*Prunus virginiana* — native), hound's tongue (*Cynoglossum officinale* — exotic), clear weed (*Pilea* sp. — native), bluegrass (*Poa pratensis* and *compressa* — exotic), dame's rocket (*Hesperis matronalis* — exotic), meadow rue (*Thalictrum dasycarpum* — native), greenbriar (*Similax herbacea* — native), stinging nettle (*Urtica dioica* — native), clustered field sedge (*Carex praegracilis* — native), and annual bedstraw (*Galium aparine* — native). Numerous seedlings of green ash, black cherry, and bur oak were noted. Western wheatgrass (*Agropyron smithii* — native), smooth brome (*Bromus inermis* — exotic), leafy spurge (*Euphorbia esula* — exotic), yellow sweet clover (*Melilotus officinalis* — exotic), and an unidentified grass species (possibly quackgrass) were noted along woodland edges or in dryer light gaps.

Map for appendix E, statement of findings for wetlands

Soils within the area are identified by the Soil Survey for Crook County, Wyoming (NRCS 1983) as Bankard loamy fine sand, 0–3%. These soils typically occur on floodplains, are subject to brief periods of flooding, and have slow surface runoff. The Bankard soil series is not listed on either the National or State of Wyoming list of hydric soils. However, hydric inclusions (typically not named) are possible on the Bankard floodplain soil types (Darrel Schroeder, WY State NRCS, personal communication, May 2001).

Both natural and artificial conditions may be causing water to collect in the headquarters area. The wetland is located on the slope between Devils Tower and the Belle Fourche River. The source of water is thought to be surface runoff of precipitation from the Tower and other areas upslope of the wetland drainage, as well as from direct receipt of precipitation. North of the wetland is the historic park road, also built in the path of runoff from the Tower. Multiple small catchments have been dug near the road to keep runoff from flooding it. The roadway and established catchments have also served as long-term historic alterations to surface hydrology that would have naturally continued on into the wetland drainage.

Although the degraded wet area associated with the headquarters expansion has undergone several hydrological alterations, it still retains some ability (in whole or in part) to provide the following functions: (1) flood storage, (2) groundwater recharge, (3) groundwater discharge, (4) sediment trapping, and (5) maintaining a unique vegetation type (shaded wetland) within the park. Although not as significant as the above, this wetland provides nutrients and short-term seasonal retention and removal of pollutants, thereby improving the quality of surface water and groundwater. The diversity of wetland and upland habitats also provides habitat to a variety of wildlife species (such as deer, raccoon, small mammals, and numerous local bird species). No federally listed or state-listed threatened or endangered plant or animal species occur within the proposed project area.

PROJECT IMPACT ON WETLANDS

Enlarging the headquarters building from 1,150 square feet to 2,300 square feet and relocating the 25-car parking would add additional fill over 0.03 acre and add permanent structures to an already filled wetland. The loss of 0.03 acre of wetland would be a long-term negligible adverse impact. Construction activity would temporarily disturb an additional 0.5 acre of the wetland. This would be a minor short-term adverse impact.

WETLAND AVOIDANCE AND MINIMIZATION

The alternative of moving the headquarters outside the monument was considered. Land is not currently available, and should land become available, costs would be high. Most of the flat land that could be used for buildings is in or near the floodplain of the Belle Fourche River. Keeping development out of the viewshed from Devils Tower is a goal that increases the difficulty of finding a suitable site. The most practicable alternative was determined to be adding onto the headquarters building, which is built on fill in a wetland area. The parking area is being moved behind the headquarters to remove it from the historic view along the historic road and from the Tower.

All possible wetland avoidance and minimization measures would be incorporated into the design of the headquarters expansion and parking relocation within the constraints of good design, preserving the historic scene, and preserving views from Devils Tower. The use of best management practices (BMP) would be employed to minimize impacts on wetlands. BMPs used in this project would include, at a minimum, the installation of temporary control devices throughout construction (such as: silt fences, slope drains, straw bales, inlet protection, sediment traps, and protective fencing), and the stabilization and restoration of soils exposed as a result of grubbing, clearing, filling, and excavation activities following completion of construction. Measures would be implemented to control the spillage of fuels, lubricants, or other contaminants that might otherwise enter the waterway or wetland. The use of heavy equipment in wetlands would be avoided. Whenever possible, excavated material would be placed on an upland site. Existing wetland vegetation materials would be salvaged for replanting in areas receiving short-term disturbance and for use in areas of mitigation where possible. Disturbed areas would be revegetated in accordance with NPS policies and guidance.

The resulting loss of 0.03 acre of wetland and the short-term disturbance of 0.5 acre has been deemed unavoidable. Although a portion of the wetland would be lost, the proposed action would minimize construction impacts on the site and provide much needed interior space at headquarters to more effectively manage the monument.

WETLAND MITIGATION

A total of 0.03 acre of forested wetland would be lost and 0.5 acre would be temporarily disturbed during the course of construction.

To compensate for the lost wetland acreage, at least 0.03 acre of forested wetland would be restored in accordance with Director's Order 77-1.

The area for restoration is within the monument. An area of forested wetland of similar species composition has been identified as the first choice for wetland restoration. It is on the west side of the meander where the campground is located. The campground would be removed in the preferred alternative. The preferred site is shown on the attached map. Should this site fail to be suitable, a forested wetland site in one of the ravines (outside of the project area) would be considered.

The wetland restoration acreage compensation ratio for the project is 1:1. It is anticipated that wetland of equivalent type and function can be restored within the monument relatively near the impacted wetland.

Design and construction funds for Devils Tower headquarters enlargement and parking relocation and the removal of the campground, picnic area, and amphitheater would be the funding source for this wetland mitigation. As funding for this project became available and construction drawings were prepared, the National Park Service would develop a wetland restoration plan for Devils Tower National Monument.

Restoration at the campground area would be conducted at the same time as the wetland fill activity at headquarters, or earlier. The campground is located on a meander of the Belle Fourche River where wetlands are adjacent. Mitigation would consist of the following:

- removing the fill
- reestablishing natural elevational contours
- ensuring that proper hydrologic conditions are present to maintain the wetland
- planting native vegetation, to include salvaged materials from the disturbed wetland site and additional seeded materials of existing native wetland species (a species list for seeded materials, including seed source and seeding rate information, would be included in the detailed mitigation plan.)
- removal of exotics, should they become established on the site
- replanting vegetation if necessary to ensure the development of a natural vegetated wetland

Detailed mitigation planning will be done when the project is funded. It may be done through contracting, prepared through a technical assistance request to the Intermountain Support Office, or through other means.

CONFORMITY WITH FEDERAL, STATE, AND LOCAL STANDARDS

The U.S. Army Corps of Engineers would review the design drawings for the headquarters enlargement and parking relocation and wetland delineation report prior to construction. The project designers would request authorization to fill the wetland.

A permit from the U.S. Army Corps of Engineers will not be required to fill less than 0.1 acre of wetland in the project area. It falls under the nationwide permits because it is less than one acre.

CONCLUSION

The National Park Service finds that there are no practicable alternatives to disturbing 0.03 acre of wetlands within this project. Wetlands have been avoided to the maximum practicable extent, and the wetland impacts that could not be avoided would be minimized, and compensatory mitigation would be implemented. This project is consistent with the "no net loss of wetland" policy. The National Park Service, therefore, finds that this project is in compliance with Executive Order 11990: "Protection of Wetlands."

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APPENDIX F: MEMORANDUM OF UNDERSTANDING REGARDING PRAIRIE DOGS

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